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ABSTRACT

A research project examined the effectiveness of using personal tutors/counselors in distance education programs as a means of reducing student attrition. In the experiment, one person integrated the roles of different tutors in different subjects as well as the role of the student advisor in the ordinary distance education system. The main difference between the treatment of the experimental and control groups was that the experimental students communicated with one personal tutor who integrated administrative, teaching, and counseling functions, which are normally carried out by three separate individuals in Norway's distance education system. Students in the experimental group participated in 3 to 11 courses each. Eight months after enrollment, the experimental group had a higher completion rate than the control group. However, although the completion rate was higher in the experimental group, the proportion of active students was still comparable with that of the control group. The control group contained a larger percentage of inactive students. (Appendixes to this report include the study questionnaire and study-related correspondence in Norwegian. A bibliography is also included.) (MN)

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ED266249

Torstein Rekkedal

Introducing the personal tutor/ counsellor in the system of distance education.

Project report 2: Final report

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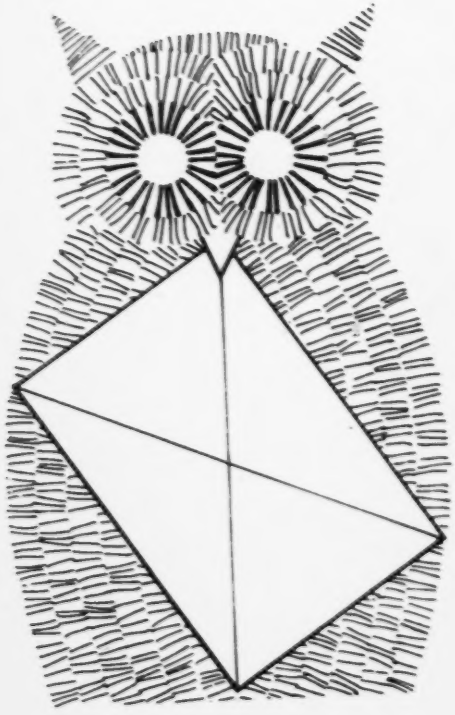

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PREFACE

This report describes an experiment carried out at NKI-skolen. The experiment is concerned with trying out what we consider to be "a new tutor role" in a relatively specialized system of distance education. The experiment took place in 1980-81. "Project report 1: Experiment description" was published in 1981. The first report described the ideas behind the experiment and the experiment itself. At that time I planned to publish the final research report with complete results within a short time. However, because of other priority commitments the plans could not be realized. Consequently, this report has been delayed by more than two years. Because of the delay I have decided to include all relevant information from the first report in this one. Thus, readers who do not possess the first report, are at no disadvantage. The chapters 2, 3 and 4 are mainly taken directly from the first report. Only a few corrections and minor changes have been made. Some notes on new literature have been added.

In the title of this report I have used the term "distance education", which I consider to be a broader term than "correspondence education". I prefer to use the term "distance education", because I find that the aspect of distance between tutor/institute and the student is the main characteristic of our instructional system, in which we try to apply whatever method, medium or administrative means which is considered to be educationally effective and cost-efficient in each separate case. This report will also show that both the experimental group and the control group are parts of an educational system using other means of communication than pure correspondence between the student and the tutor. In my opinion this is also the case for most institutes today using the term correspondence education. As there is no need for differentiation in this report, the terms will be used synonymously. The "tutor" is the person who corrects, comments upon and evaluates the student's papers.

The experiment described here, was NKI's contribution to a cooperative project on non-start and early withdrawals in correspondence education, initiated by the Norwegian Association of Correspondence Schools. The Association has received some financial support for the project from the Ministry of Church and Education. In this project we planned to prepare an analysis of the non-start and early drop-out problem in correspondence education, develop measures to help the student cope with the assumed difficulties during the initial stages of the studies, and carry out experimental research on the effects of such measures.

(Since the first report on this experiment was published, another report from the main project has been made available (in Norwegian only): "Begynnerfrafall i brevundervisning. En litteraturstudie" by Elly Huitfeldt.)

In principle, such measures can be built into the study material, and/or they may include efforts to increase the pedagogical quality of other elements of the correspondence education system, such as introductory courses in study techniques, more general introductions and information, study guidance, systematic follow-up, telephone tutoring, etc.

In an educational system where most of the students study one single course (not necessarily the same for all students), it seems reasonable to build

as many as possible of the educational measures into the preproduced material for the individual courses. However, in a system where the students normally study several courses either simultaneously or in succession, it seems logical to concentrate efforts on developing educational support also in elements of the system other than the individual course material. Especially will this be the case for NKI-skolen in this project, where we concentrate on the initial phase of the studies. In our system the same course may be the first course for one student and a later one for another. Thus, during the planning stages of this project, it was decided that NKI would experiment on organizing the starting phase of the studies by introducing measures outside the individual course material, while the other participating schools would experiment on the effects of designing special introduction units within the course material. The aims of both kinds of measures would be to reduce the number of student withdrawals before submission of the first assignments and other early withdrawals and increase the number of successful completions.

By withdrawals we mean students who disrupt their courses without completing the total number of study units, i.e. not submitting all the assignments. The term withdrawal is used synonymously with drop-out. Students who withdraw or drop-out without submitting at least one assignment are described as non-starters. By early withdrawals we simply mean students who drop-out during the initial stages of the course without defining any exact number of study units.

On the basis of previous research, experiences at NKI and intensive interviews with students, we found that a number of assumed improvements can be obtained by introducing a new role for the correspondence tutor or a new way of organizing the tutor's work. We believe that this new tutor role represents a general improvement of the correspondence teaching system, however, in this experiment we examine the effects of this re-organization in the initial phases of the studies only. We also believe that the introductory phase is of extreme importance for the student's probability of study success. Thus, possible positive effects from the organization tried out in the experiment, may probably be generalized to apply to later phases of the studies as well.

In the planning of this research I have had great benefits from discussions with my colleagues Svein Qvist-Eriksen and Knut Christophersen at NKI and the project group in the Norwegian Association of Correspondence Schools. Knut Finsen has been employed as teacher in charge of students allocated to the experimental group. He has also made important contributions to the design of the experimental variable. Knut Christophersen has also been responsible for the processing of the experimental data on the computer. A special thanks to Lilica Holt Olafssøn, who has been of considerable help preparing this English version.

In spite of help received from friends and colleagues, I am personally responsible for the content and form of this report.

Stabekk, January 1985

Torstein Rekkedal

CONTENTS: Page

PREFACE 3

1. SUMMARY 8

2. BACKGROUND FOR THE EXPERIMENT 14

2.1. The drop-out problem in correspondence education 15
2.1.1. Discontinuation 16
2.1.2. Non-starters and early withdrawals 17
2.1.3. Reasons for discontinuation 18
2.2. Other research concerning the drop-out problem 22
2.2.1. The initial phases of study 22
2.2.2. Following-up students 23
2.2.3. Turn-around time 24
2.2.4. Tutoring by telephone 26
2.2.5. Social isolation 28
2.3. The correspondence tutor 29
2.4. Counselling 33

3. EXPERIMENTAL PROCEDURES 36

3.1. Personal tutor 36
3.2. Employment 37
3.3. Integrated tutor - counsellor 38
3.4. Turn-around time (circuit time) 39
3.5. Tutoring by telephone 39
3.6. Initial follow-up 40
3.7. Follow-up of inactive students 40
3.8. Other aspects of the tutor's work 40
3.8.1. Introduction to study techniques 40
3.8.2. Preproduced tutor comments 41
3.8.3. "Tutor's presentation" 41
3.9. Summary of the tutor's role in the experiment 41

4. RESEARCH DESIGN AND PROCEDURES 44

4.1. The courses and the selection of students 44
4.2. Research design 45
4.3. Questionnaire design and collection of data ... 45
4.4. Statistics/data processing 46
4.5. Summary of the problems to be investigated 46

5. DESCRIPTION OF THE EXPERIMENTAL GROUPS 48

5.1. Recruitment from the different counties in Norway 48
5.2. Sex distribution 50
5.3. Previous education 50
5.4. Age 52
5.5. Period of time since last school experience ... 53
5.6. Number of courses and study units 54
5.7. Conclusion 55

6. STUDY RESULTS 56

6.1. Introduction/definition of criterion variables 56
6.2. Start/non-start 57
6.3. Number of days before registration of the first study assignment 58
6.4. Study perseverance 59
6.4.1. Status 59
6.4.2. Number of assignments submitted 62
6.4.3. Number of courses completed 63
6.4.4. Perseverance - conclusions 64
6.5. Postscript concerning completion 64

7. ATTITUDE VARIABLES 65

7.1. Return of questionnaires 65
7.2. Distance correspondence study in general 66
7.3. Quality of the study material 67
7.4. Degree of difficulty of the assignments for submission 67
7.5. Description of the work involved on the assignments for submission 69
7.6. Evaluation of tutor's work: corrections/comments 70
7.7. Assistance and support from the tutor 71
7.8. Distance students and problems of isolation ... 71
7.9. Guidance and counselling 72
7.10. Follow-up 73
7.11. Contact by telephone 74
7.12. Use of the telephone in actual practice 76
7.13. Some relationships between attitudes and contact by telephone 78
7.14. Some relationships between student variables and the use of the telephone 81
7.15. Some relationships between criterion variables and the use of the telephone 81
7.16. Turn-around time 81
7.17. Attitudes towards turn-around time 83
7.18. Relationship between experienced turn-around time and attitudes 84

8. CONCLUDING REMARKS 86

8.1. Drop-out during the initial phases of distance study 86
8.2 The personal tutor/counsellor 86
8.3. Sources of errors 86
8.4. Study perseverance 87
8.5. Attitudes 89
8.6. Some cost and financial considerations 91

BIBLIOGRAPHY 94

Appendix 1
Appendix 2
Appendix 3

1. SUMMARY

Research within distance education seems to show that drop-out is a more serious problem during the first part of a course than when the students have acquired some experience with the subject and the study method.

In 1980 the Norwegian Association for Distance Education initiated a cooperative project on the non-start and early withdrawal problem. The schools which participated in the project wanted to analyse why so many students enrol in correspondence schools and never start their studies, and what measures could be taken to reduce the rate of non-start and drop-out. Also certain experiments were planned to test some of the possible hypotheses on how to reduce non-start and drop-out rates. The experiments were to deal with different aspects of the correspondence study system.

This report describes the experiment within this project which was carried out at NKI-skolen during 1980-81.

For more than 10 years we have carried out surveys to examine, among other things, the drop-out problem in correspondence education. We have also arranged experiments where the real effects of certain educational or administrative efforts, introduced to increase efficiency in teaching and reduce drop-out rates, have been examined. These experiments have dealt with study technique, follow-up of newly enrolled students, follow-up of inactive students, turn-around time of assignments and preproduced tutor's comments. To a large extent the results from these experiments have been so promising that the measures examined have been permanently applied.

Chapter 2 of this report gives the background for the "personal tutor/counsellor" experiment with a view of research on the drop-out problem in distance education. Different survey studies on non-start and drop-out, as well as studies examining student reasons for the discontinuation are discussed. Further, experimental studies with special relevance to our research problems and procedures are briefly presented.

During the planning stage of the cooperative project we carried out some intensive interviews with a group of new students. These interviews confirmed that the students seemed to be satisfied with correspondence study in general. However, most students seemed to have one common problem: they were reluctant to contact the administration, the counsellors or the tutors when they met difficulties, and they were uncertain about whom to contact in order to seek advice on different problems. We felt that the rationalization and "industrialization" of distance education which seem to be necessary to cater for large student groups and at the same time keep down expenses, probably result in a division of work and a depersonalization of instruction. This situation seems to cause difficulties for many new students.

Thus, we decided to design an experiment where we wished to personalize teaching by introducing what we called "the personal tutor/counsellor in the system of distance education". In this experiment one person integrates the roles of different tutors in different subjects, as well as

student advisors in the ordinary distance education system. Within the work of this tutor we also tried to integrate other measures which we believe are important to help the distance students to complete their studies successfully. In short, we wished to construct a system which would constitute a "new" way of organizing the tutor's work during the initial phases of the correspondence study, where emphasis is put on the didactic functions of the distance tutor and the communication between one tutor and one student.

The students selected for this experiment were assigned to a personal tutor who followed them closely during the first 3 to 11 courses of a composition of courses leading to a certain qualification. By this formal change in organization, a number of aspects of the tutor's work and the division of work between the adminstration, the counsellors and the tutor were changed.

The control group was not deprived of any of the services introduced on the basis of theory and research during the last 10 years, and which now constitute a normal part of the NKI distance teaching system. The main difference between the treatment of the experimental group and the control group was that the experimental students communicated with one personal tutor integrating administrative, teaching and counselling functions, which normally are separated. The experimental role of the tutor is described in some more detail below, which summarizes the description given in chapter 3.

Personal tutor

Students studying a course composition will normally have to communicate with a number of different tutors, who all feel responsible mainly for their own subject(s). Lack of insight into the student's total situation and the total teaching system may be an obstacle to giving maximum support. In the experiment we arranged a system where the student communicated with only one tutor during a certain part of the studies. One of the drawbacks of this system is that the tutor has to teach more than one subject and thus do a less specialized job. However, we believe that the advantages are evident. The tutor's work becomes more varied. The tutor and the student achieve a better mutual understanding. The tutor is able to point out the relationship between the courses and help the student to transfer knowledge gained through one course to another. This organization also opens the possibility for the tutor to take responsibility for general counselling of the student, and also opens the gateway to the other arrangements described below.

Employment

Correspondence tutors are normally paid on a per assignment basis. It is, of course, difficult to find out which consequences this fact may have for the work carried out by the individual tutor. However, we can easily think of possible negative effects on teaching quality. The experimental tutor

is employed on a fixed salary basis. This should ensure that time spent on the individual student will be in accordance with the student's real needs.

Integrated tutor - counsellor

The full time student advisors do not normally have sufficient subject knowledge to help the student with subject related learning problems which may arise. Very often the advice given may constitute some kind of "pseudo counselling", which may reduce the student's possible feelings of isolation, but which doesn't really help to solve learning problems or difficulties with study planning and organization. A system where the roles of the tutor and the counsellor are integrated in one person increases the possibilities of solving the student's problems, whether they concern subject matter, study organization, personal/social difficulties, administrative procedures or financial matters.

Turn-around time

By employing the tutor part-time or full-time within the school's administration, the turn-around time may be reduced. In this experiment all assignments were normally returned to the student the same day they were received, and two postal handlings (from the school to the tutor and back) were removed from the system. The part-time tutors who took care of the control group, were requested to return the assignments within one day, as a normal routine. Nevertheless, the experimental group was ensured a considerably lower turn-around time.

Tutoring by telephone

Tutoring by telephone was included in the experiment. The tutor/counsellor phoned all students who had given their telephone number, in connection with the assignments submitted, and as part of the student follow-up routines.

Initial follow-up

The tutor in the experiment contacted all the experimental students approximately 10 days after dispatch of the study material. When possible, the contact was established by telephone. The other students received a form letter. All the experimental students were contacted about 1 month later by phone or letter, and again during the third month after their enrolment. As part of the normal routines, the control group received a form letter signed by one of the counsellors, approximately 10 days and 1 month after enrolment. The difference in treatment of the experimental group and the control group is mainly the degree of individualization achieved through the personal tutor/counsellor.

Follow-up of inactive students

In the ordinary NKI system students who have been inactive for a whole calendar month receive a post-card. A sequence of two form letters and questionnaires follows the card if the student doesn't contact the school or start to study again during the next two months. The experimental students in this project were followed up in a similar way. The main difference is again that these contacts were established by the tutor/counsellor either by telephone or by personal letters.

Introduction to study techniques

Some years ago NKI introduced a course in study technique as the first course (1 submission only) for students enrolled in programmes consisting of a number of single courses. The tutor teaching the experimental group commented on and evaluated the work of the students in this course as well, while the control group was assigned to a separate teacher in this course.

Preproduced tutor comments

The use of preproduced tutor comments was not specifically defined in the experiment. Complete and detailed solutions to all assignments were developed, including standard comments. These were enclosed with the students' assignments, according to the tutor's judgement of the individual students' needs.

"Tutor's presentation"

All NKI's part-time tutors have prepared a personal presentation of themselves. The presentation sheet is sent to the student together with the first assignment returned by the tutor. It contains a personal presentation, advice on the course and a picture of the tutor. Students in the experimental group received the presentation of the tutor together with the study material. Consequently, these students were in fact able to establish contact with the tutor on their own initiative, even prior to submitting their first assignment. If they did not contact the tutor when problems arose, the tutor would contact them in any case. The tutor's presentation described the tutor's role and also the possibility of telephone contact.

Chapter 4 describes the research design and procedures. The students involved in the experiment were enrolled in course compositions consisting of a number of single correspondence courses leading to an examination. The experiment took place only during the first formally defined stage of the studies. Thus, the number of courses taken by each individual student in the experiment ranged from 3 to 11.

New distance students were selected for the experiment during a five month period from 01.11.1980 to 01.03.1981. They were divided, at random, into one experimental group (last digit in the identification number 1, 2, 4, 5, 7, 8) and one control group (last digit 0, 3, 6, 9). The experimental students were assigned to one personal tutor, while the control students were part of the ordinary NKI system, involving several tutors, general counsellors, automatic follow-up etc.

Data about study progress and the rate of completion were collected at the time of cancellation, completion of the first stage of study or 8 months after enrolment. A minor questionnaire was sent to the students in both groups. The questionnaire contained items on correspondence study in general, the tutor's work and counselling to examine whether different aspects of distance study were perceived differently by the students in the two groups. The other data were collected from the files and study records.

From the experiment we hoped to find some of the answers to the following questions:

1. Will this organization have any effect on the number of students starting their studies (defined by submitting one or more assignments)?

2. Will this organization have any effect on drop-out rates during the early stages of study?

3. Will this organization have any effect on the pace of study and student activity?

4. Will this organization affect student attitudes towards correspondence education in general and/or specific aspects of correspondence study?

5. What will the consequences of this new tutor role be regarding the organization of other aspects of the correspondence education system, as well as the costs of correspondence education?

It might seem that interpreting the results from this experiment would involve many problems. This is indeed correct. However, we found it important to try out a complete system, and decide whether correspondence teaching could be organized in some other way than what has been usual. Research has shown that each individual effort involved in the experiment may have positive effects on facilitating the situation for distance students. Still, we felt that it remained to be seen whether the integration of the measures achieved by introducing the personal tutor/counsellor would constitute a better offer. We also wanted to examine if such a personalized system could function within the frames set by the financial, adminisitrative and organizational demands of a modern distance teaching system.

Chapter 5 gives a general presentation of the students who participated in the project. First of all, this description gives the reader a general

impression of the students who enrolled for the technical courses offered by NKI-skolen. Secondly, the background information was used to control that the differences between the experimental group and the control group were within the limits set by the tests of significance. We found that possible differences between the groups after the experimental treatment could not be ascribed to differences caused by sampling errors.

In chapter 6 we examine and analyse the results of the experiment measures by study perseverance variables, such as start/non-start, status (completed, active, inactive, cancelled), number of assignments submitted and number of courses completed. The conclusions were quite clear, marked differences between the groups were found. The differences were statistically significant. The students in the experimental group had a higher completion rate, they were more active in their studies and completed a larger number of study units and courses during the experimental period. On a descriptive level we may also conclude that the completion rate was high and students were more active in their studies compared with most studies reported elsewhere. Only minor differences between the groups were found concerning start/non-start. In general, the non-start rate was low in both groups.

The students' attitudes to distance study in general and to different aspects of distance study, some of which were, and some of which were not manipulated in the experiment, were measured by a minor questionnaire. The results of this survey are presented in chapter 7. Generally, the students in both groups had a positive attitude to distance study. However, the experimental students were more favourable when answering questions concerning the quality of the tutor's work, assistance and support from the tutor, guidance and counselling services and follow-up procedures. Only small differences were found concerning the students' feelings of isolation.

Attitudes concerning the telephone and the use in actual practice were also analysed. Both student groups had a positive opinion of the telephone as a helpful medium in distance study, nevertheless the differences between the groups was statistically significant. The experimental students who had experienced a systematic use of the telephone in tutoring and follow-up expressed greater confidence in the effect of telephone contacts with the tutor.

Chapter 8 contains a summary and concluding remarks concerning the findings analysed in chapters 6 and 7. Finally, we also mention some cost and financial factors. We found that the arrangement tried out in the experiment stands a test based on financial and cost evaluations.

2. BACKGROUND FOR THE EXPERIMENT

There is no doubt that drop-out is the problem which has been given the highest priority among researchers within correspondence or distance education for the past ten to twenty years. In some cases it is open to discussion whether the rate of drop-out or completers constitutes the most significant criterion for decisions about the effects of educational improvements or changes in the system of distance education. Normally, we would assume that a grown up person participating in adult education should be free to take responsibility for main decisions about enrolment and, if desired, cancellation of his/her studies. Thus, for some "drop-outs" cancellation of the studies may be a more goal oriented decision than continuing the studies to a formally defined completion. However, in most cases, we believe that the majority of the enrollees actually intend to complete the courses, or wish to progress as far as possible towards the completion of the course. In adult education the student's real competence or maybe his/her feelings of success probably increase in some way relative to the quantity of studies completed, and in most cases we believe that the efforts are not wasted even when the studies are not totally completed.

It is of course possible that some efforts to increase the total quality of distance education, e.g. better individual counselling during the prospective phase or initial phase, may have the effect that the students develop a better understanding of the situation, the studies and future possibilities, which cause some students to cancel their studies at an early stage. If so, this is probably a desirable result. But statistically, if the educational system basically is sound, we believe that any real improvements in quality regarding educational methods, media, presentation, administration or counselling will generally result in increased study persistence and/or a reduced drop-out rate, and that both effects should be looked upon as positive results.

The starting point for this project is that the rate of drop-out, especially in the starting phase, in correspondence studies generally seems to be higher than we ought to accept, i.e. a large proportion of newly enrolled correspondence students encounter difficulties which cause them to give up their studies - some in fact, give up before they have really started (in correspondence education defined by submitting the first assignment). In this project we shall examine what the correspondence institute and/or the correspondence tutor can do to reduce these initial difficulties as much as possible. When trying to increase the quality of a distance teaching system one can distinguish between two broad categories of efforts:

a. Developments involving local support services, face-to-face teaching, student group activities or other efforts which include direct face-to-face communication.

b. Developments concerning the mediated two-way communications.

Developments in the first category have been given priority by many distance teaching practitioners during the past two decades. The increased number of courses offered as combined teaching in Norway illustrate this situation very clearly.

In our research we have emphasized developments in mediated two-way communication. Distance teaching is especially designed for adults who, for many different reasons, are unable to or prefer not to attend classes or activities involving direct communication with fellow students. Consequently, an emphasis on increasing the importance of face-to-face teaching in distance education may have the effect of excluding a large number of potential learners from the system, decrease the flexibility of distance teaching and possibly decrease the attention to possible positive developments of mediated communications. This view is strongly supported by Holmberg:

> "..., theoretical considerations bearing on mediated two-way communications and practical development work in the field belong to the most important tasks of distance educators".
>
> (Holmberg, 1983 p. 22).

In the following sections we shall present some research which we consider to be of relevance to our experiment.

2.1. The drop-out problem in correspondence education

At NKI-skolen we have earlier carried out some survey studies concerning recruitment, persistence and drop-out in correspondence education (Rekkedal 1971, 1972a, 1973a, 1976, 1978a). We shall briefly comment upon questions concerning the drop-out problem, which also have been described in earlier reports.

Comparing drop-out rates within different correspondence courses in different institutes is very difficult and normally not very fruitful. The courses vary in content, level, quality of work, degree of difficulty and organization. Also the educational methods and media involved differ from course to course. Further, there are large differences between criteria used in connection with course drop-out and cancellations and how drop-out and success are defined. In some surveys all students enrolled are taken into consideration. In other studies only individuals who really have started submitting assignments are defined as students (see Rekkedal 1978a, p.30). Nevertheless, the quantitative data published seem to indicate that the rate of drop-out in correspondence education normally is considerably higher than in full-time face-to-face education, and that the number of students dropping-out is especially high in the beginning of the studies (see for example Glatter & Wedell 1970), but not generally higher than in other forms of part-time studies.

We shall give some examples.

2.1.1. Discontinuation

In a large American study from 1956 among more than 40 000 college level enrolments in 32 institutions, 60 percent of the students who enrolled completed their courses, and 73 percent of those who sumbitted at least one assignment went on to completion. At high school level nearly 18 000 enrolments in 24 institutions were examined. 58 percent of the enrolled students completed, while 69 percent of those who submitted one or more lessons completed (Research Committee of the Division of Correspondence Study) reported from Childs (1966 p. 130).

In a review of many studies carried out from 1929 to 1965, the completion rates, using the NUEA-formula (National University Extension Association), which counts students who have started submitting assignments only, range between 35 and 75 percent. Among all enrollees the completion rates are reported to range from 35 to 63. Donehower (1968) found a completion rate of 60 percent among 905 university correspondence students using the NUEA-formula.

The German correspondence institute, Studiengemeinschaft Werner Kamprath, has reported that the rate of completions among students studying different courses is 28 percent only (Peters 1965).

Jones & Wylie (1970) report that 55 percent of the enrollees completed a 20 study unit course which was introduced by two weeks of face-to-face instruction. Pfeiffer & Sabers (1971) report completion rates between 24 and 75 percent on courses containing 8 to 24 study units. The smaller the courses, the larger the completion rate.

In an interview Holmberg (1971) has reported some statistics concerning the completion of single courses at Hermods. He reports that approximately 30 percent have completed the studies. However, completion is defined as submitting at least 70 percent of the course assignments. Andersen and Tippy (1971) report that approximately 60 percent of the students who participate in correspondence study do not successfully complete the course.

A few years ago, in connection with some data collected at NKI-skolen, initiated by the Norwegian State Council for Correspondence Schools, we found that 82 percent of all students enrolled had completed a 3 unit course. 44 percent had completed a 12 unit course (another 28 percent were still working on the course).

Quite a lot of data about drop-out and completion of correspondence courses has been reported in connection with experimental research. Some of these results will be described in section 2.2.

Some student groups have received special attention, e.g. students whose courses have been paid by "Veterans Administration" in USA. Reports show that only 25 percent of these students complete their courses (Veterans Adminstration 1972).

In Norway the study activities among seamen in the merchant navy have been followed with interest. Hui (1969) says that only 20 percent of seamen enrolled in correspondence courses completed their courses. Skår (1973) reports that 80-90 percent of the seamen discontinue their courses. At NKI-skolen we have found that 90 percent of seamen enrolled in course compositions (a sequence of single courses) had dropped out 2.5 years after enrolment (Rekkedal 1972a).

We shall briefly review some results concerning drop-out surveys on course compositions. Probably these are the most interesting in relation to our experiment described in this report. In an Australian study it was shown that 34 percent had completed their university courses through correspondence/distance study, 8-10 years after enrolment (Sheath 1965). A study carried out among Japanese high school students reports that 57 percent had dropped out after five years (Schramm 1967).

In our earlier surveys at NKI-skolen we have collected a considerable statistical material on completions and drop-out in relatively large course compositions. For the enrolment years 1967/68, 1968/69, 1969/70 we found that about 75 percent of the students discontinued, without reaching their original study goal 2.5 years after enrolment (Rekkedal 1972a, 1973a, 1978a). The Open University has also published data on course completions/drop-out. It is reported that about 50 percent of the formal and ultimately registered students sit for an examination (McIntosh et al. 1979).

2.1.2. Non-starters and early withdrawals

By the term "non-starters" we mean students who enrol for a course and who never start to submit assignments. In most cases we do not know whether these students have really started to study the first lesson, nor do we know which problems they have encountered.

By "early withdrawals" we mean students who have sent in at least one assignment and then drop out during the first part of the course; the exact number of study units completed not defined. In fact, the majority of the drop-outs quit during the inital phases. Practitioners and researchers in the field seem to agree that in order to help students towards a successful completion, one should concentrate on establishing extra supporting counselling and teaching efforts in the beginning of the courses. The results from some research studies show that normally between 10 and 30 percent of the distance study enrollees never start to send in assignments. Pfeiffer & Sabers (1970) report percentages between 13 and 32 on courses consisting of 8-32 study units. Jones & Wylie (1970, 1974) report 10 and 11 percent, Harter (1969) says that 34 percent of the students who discontinue never start to study. Bradt (1956) states that the figure for military students at USAFI is more than 50. Wedell & Perraton (1968) report that 21 percent never start, while James & Wedemeyer (1959) report one third of the students to be non-starters. Hui (1969) mentions that 34 percent of the enrolled correspondence students in the merchant navy never started their studies. In Donehower's (1968) survey among university correspondence students the non-starters constituted 14 percent of all

enrollees. In the surveys carried out at NKI (Rekkedal 1972a, 1973a) we have found that approximately 11-12 percent never submit any assignments.

Beside the fact that there is a number of students who never start to study, there are some who drop out during the first part of the course. Harter (1969) reports that 75 percent of the drop-outs withdrew before they had completed 1/4 of the course. James & Wedemeyer (1959) assume that a student who has completed 1/3 - 1/4 of the course, probably will complete the whole course.

In our previous research at NKI we have shown that about 50 percent of the drop-outs from the enrolment year 1967-1968 had completed less than 9 study units (Md = 8.3) (Rekkedal 1972a). For the two next years' enrolments, the number of study units completed by 50 percent of the drop-outs had increased to 9 and 11 study units respectively (Rekkedal 1973). In our last survey (enrolment year 1972-1973) this figure was 14.5 study units. From a survey by Sheath (1965) it is reported that 33 percent of the students withdrew during their first year of study, while the average withdrawal rate the subsequent years was 15 percent. Similar figures are reported by Smith (1976). McIntosh et. al. (1976) report that the students of the Open University may register provisionally for 3 months. About 20 percent withdraw during this period ("early withdrawals").

From the studies only briefly mentioned here, we may safely conclude that both non-starting and early withdrawal are problems worth serious consideration by distance educators.

2.1.3. Reasons for discontinuation

Some research has been carried out to disclose the reasons for student withdrawal in correspondence education. We shall present some of the findings from these studies.

Houle (1964) states the following reasons why adults, who initially engage in education, give up:

1. Some students accomplish their goals before the end of the course.
2. Some students have low academic aptitudes.
3. Some students encounter problems in their personal lives.
4. Some students are dissatisfied with instruction.
5. Some students are dissatisfied with administrative policies and procedures.

And finally:

6. Many adults do not know how to learn.

The first point above is often emphasized by adult educators (e.g. James & Wedemeyer, 1959). This reason has also been given by students who drop out of NKI courses. However, we feel that this reason should not be generally

over-emphasized. The danger exists that it could become an excuse for adult educators to continue practices which could be changed to the better.

Another important cause is mentioned by Zahn (1964 p. 36):

> "Adult education courses are usually advertised and may be over-advertised or misleadingly advertised, thereby attracting students who are unable to profit from the instruction or students who are seeking knowledge the course is not intended to provide".

Zahn was analysing problems in connection with recruitment to university extension courses in USA, but her observation can also be applied to adult courses and distance courses in Europe, including Norway.

Nevertheless, we feel that the quality of advertising as well as the quality of counselling offered to prospective students has improved considerably in Norway during the past 20 years. This is probably due to a growing concern about these matters among distance educators and also the work done by the State Council for Correspondence Schools.

Hosmer (1965 p. 37) suggests the following solutions to the drop-out problems, which we find rather drastic:

> "To cut drop-out rates in correspondence courses, it is recommended that schools:
>
> Find out which groups of enrollees are most likely and which are least likely to graduate.
>
> In advertisements and information reaching prospective enrollees, emphasize those aspects of the work which have been found to attract high-yield groups and play down those aspects of the work which attract low-yield groups.
>
> Minimize expenditure of management time and money in trying, by mail to induce unresponsive students to produce work. Instead, invest that time and money in improving the content and validity of the examinations of the course".

These recommendations would probably not fit in with the Norwegian adult education policy where adult education is considered primarily to be an offer to the educationally disadvantaged and is also a means of equalization (NOU 1976: 46).

Course advertisement will also involve a balance between "over-advertising", and thereby attracting some students who are unable to complete the studies, and "under-advertising" which may result in not attracting students who could very well benefit from the course. Most earlier experiences show that people who already have a relatively high formal education are overrepresented among adult students (see e.g. Nilsen 1963, Isaksen 1973, Finstad & Hansen 1976).

A recruitment policy as suggested by Hosmer, would probably result in adult education contributing to even larger educational differences than it does today. Probably, a better solution would be to try to identify the difficulties which are encountered by different groups of students and search for measures which would increase the probability of their success.

In our first survey of NKI we found that "lack of time" was the most frequent reason given by the drop-outs. Further, in order of frequency, the reasons mentioned were: "changed to other school work", "economic reasons", "major changes in the plans for the future", "illness", "building my own house", "called into the army", "personal reasons" and "marriage". Reasons for discontinuation which are within the schools direct control were mentioned by very few former students (Rekkedal 1972a). Similar results are reported by others.

Holmberg (971) reports the following reasons for discontinuation of correspondence courses at Hermods, in order of frequency:

1. Changed to another school
2. Changed plans for the future
3. Demanding employment responsibilities and lack of time
4. The studies not practically useful
5. Illness
6. Personal reasons
7. Study difficulties.

The method of data collection is not mentioned. From an American survey, Sloan (1965 p. 8) reports the following important reasons for non-completion (also ranked from the most frequent to the least frequent reason):

"1. Job required too much time - interfered with study
2. Lack of time
3. Taking residence classes at the same time
4. Lost interest - found correspondence work boring, uninspiring
5. Illness
6. Rescheduled correspondence to residence work".

James & Wedemeyer (1959 p. 90) studied the reasons for non-completion given during an intensive "case-interview". The most important reasons were the following:

"Too busy, could not find time and so on.
Major changes in job or career plans.
Illness, birth, or death in family.
Course too difficult, wrong course.
Substituted campus course work".

In a study carried out by Veterans Administration (1972) in USA, the major reasons are reported to be:

"1. Could not devote sufficient time to the courses
2. Lost interest
3. The courses were not what they had expected them to be
4. The courses were too difficult".
(Veterans Administration, 1972, p. 8.).

Some other reasons for discontinuation are reported by Harter (1969):

> "The most frequently given reason for discontinuing involved the instructor"s late return of lessons .... Of the reasons given for discontinuing, problems involving the instructor and administrative procedures were mentioned most often. In order of frequency, other major problems centered on problems involving: the enrollee's motivation and his learning orientation, other demands on the enrollee's time, new developments and changes in the enrollee's plans, content of the course itself, and miscellaneous reasons" (Harter 1969, p. ii).

In an article by Kuiper (1966) study difficulties are mentioned more often than lack of time.

In a follow-up survey in Britain, Harris (1972) found the following reasons for discontinuation to be the most important: "demands of my job", "domestic responsibilities" and "strain of studying as well as working". Less important were "social", "changed career plans" and "syllabus too dull and uninspiring". "Accident and illness", "costs" and "sufficient study" were of relatively little importance.

Thus, from most of the studies reported we may draw the conclusion that the most frequent reasons for discontinuing distance study, given by the students, seem to be more or less independent of the method itself. The reasons seem to be related to the problem of studying part-time in general. With some few exceptions only a small minority of the students in the different research studies admits to having study difficulties or states that they are dissatisfied with the course or administrative procedures.

In our last longitudinal survey at NKI (Rekkedal 1976, 1978a) we used an elaborate method to collect data about reasons for discontinuation.

We asked the students to indicate the most important single reason for discontinuation. In addition, they were asked to tick in the questionnaire whether some given reasons had been "very important" of "some importance" or of "no importance". This approach showed that what we would call "method independent" reasons still were mentioned most often as the most important reason for giving up the studies, while reasons such as "difficulties in organizing the studies", "correspondence study method not suitable", "course material not satisfactory", "turn-around time of assignments for submission too long", "dissatisfied with the tutors' corrections and comments" have been very important or of some importance to between 38 to 9 percent of the students (reasons mentioned from the highest to the lowest in frequency).

Thus, when one looks into the discontinuation problem in a larger context, it seems that reasons stemming from the method itself, the system quality or administrative procedures really play their part in a student's decision to drop-out from correspondence study.

2.2. Other research concerning the drop-out problem

During the past, several research studies have been carried out in Norway as well as in other countries within the field of distance education, partly as well controlled methodological experiments. The experiments have often been designed to try out different procedures and newly introduced measures in correspondence education.

Drop-out rates in the different groups have usually been the most important criterion variable to decide the value of new developments. In the following paragraphs we shall discuss the results of some of these research studies with a priority to studies relevant for the design of our experiment.

2.2.1. The initial phase of the study

Some research projects have concentrated on the starting phase of the studies. At NKI we have carried out an experiment where students in the experimental group were offered an introductory course in study techniques. Further, in the same experiment a system of individual following up letters to students was introduced. The letters were sent to the students at enrolment and 14, 28 and 42 days thereafter. Regrettably, the experiment had to be interrupted due to administrative changes before a sufficient number of students had been selected into the groups. With some reservations we concluded that: "... individual following up results in an earlier start" (Donehower (1968) concluded that there is a significant relationship between the lapse of time between enrolment date and first lesson and completion rate)" ... a larger percentage of students who have been followed up makes formal contacts to the adminstration, and the majority expresses a positive attitude to the counselling and administrative services ... an introductory course in study techniques may, together with an individual follow-up system, result in a lower drop-out rate during the initial phases of study ... there was no demonstrable extra effect from the course in study techniques among students who also received the follow-up letters" (Rekkedal & Hallem 1975).

From 1973 all students enrolling for correspondence courses consisting of more than one single course at NKI have started by going through the study technique course, and they are followed up by letters from a counsellor during the first two months of their studies.

A somewhat similar system was tried out by The United States Air Force Institute (USAFI), where a reminder was sent to the students selected into an experimental group if they had not submitted their first assignment within three weeks. Those who had not started within six weeks received a

second reminder. 60 percent of the experimental group submitted one or more assignments, while about 50 percent of a control group did so. Also a small - however, not significant - difference in completion rates was found. Brittain (1972) concludes: "Thus we feel that the evidence is convincing that follow-up cards can have significant effects on a clientele such as that served by USAFI". It is worth noticing that by incidence one also learned at USAFI that the different ways of formulating the message in such cards arouse different feelings. A message with a more humorous and easygoing approach reduced the number of students giving a negative response and at the same time increased the toal response.

The Fernuniversität in West-Germany has carried out an interesting experiment on systematic individual counselling of new distance students, the so-called STEB project (Fernuniversität 1978, Kuffner & Staller 1978, Kuffner 1979, Fritsch, Kuffner & Schuch 1979, Fritsch & Kuffner 1980). An information brochure designed as a correspondence course study unit was sent to the prospective students. The purpose of the unit is to help the students to understand the demands of distance study and to develop self understanding and sufficient insight to predict their own possibilities of study success. An automatic letter is received as feed-back on the students' submitted answer to the assignments.

2.2.2. Following-up students

In general, the correspondence students can choose their own pace of study. This freedom may be considered an important advantage, especially for adult learners, because the time they can set aside for study varies, dependent on other duties and responsibilities at any time. On the other hand, it is often too easy to put the studies aside, and it demands quite some initiative and strength of will to start anew.

In one of our earlier surveys (Rekkedal 1978a) we asked the former correspondence students what they considered to be the main advantage and the main disadvantage of the correspondence study method. Many students wrote "the free pace of study" as the answer to both questions. Some researchers have examined the effect of sending encouraging cards and letters to students taking an incidental interval in the studies. The Swedish correspondence institute, Hermods, has tried to measure the effect of reminders (Hermods 1967). Also efforts of contact at different intervals after enrolment were examined. The results, however, were ambiguous.

Pfeiffer (1969) has also carried out an experiment on the motivational effect of letters and cards on the students' submission of assignments. One experimental group received letters and the other cards, and these were mailed weekly to the students who had neither submitted an assignment nor received treatment during the preceding four weeks. It was concluded that neither form letters nor post cards of encouragement resulted in a significant increase in the submission of correspondence lessons in the groups involved. Childs (1971) who reports the study adds that these results are somewhat at variance with results reported by Haberman for high school students in a study conducted at the University of Nebraska in 1954.

In 1970 NKI systematically started to mail a sequence of one encouraging card and two letters to students who had been inactive for more than one month. An experiment was designed to examine the effect of this system on the submission of assignments by students studying course compositions in technical subjects. Students who had been inactive for one calendar month were selected into an experimental group and a control group. In the beginning of the calendar month after the inactive period, the experimental group received a post card which was supposed to reflect a rather light-hearted humorous approach. If the students did not submit any assignments nor make any other formal contacts to the school's counsellors during the month in which they received the card, they would receive a letter signed by the principal and a questionnaire the next month. Students not responding to this letter would receive another letter the third month.

We concluded: "It seems that the sequence of post card and form letters which was used in this experiment actually resulted in a significant increase in the submission of lessons by correspondence students after a period of non-study activity. Our data does not justify any assumptions about relations between other variables and this effect". (Rekkedal 1972b, p. 39). The results came out significantly only after the last mailing. From the experiment we could not conclude whether the total effect was a result of the last letter in the sequence or of the sequence as such. If the effect could be ascribed to the last letter, our results would be quite different from those reported by Brittain (1972) from USAFI as our first card was a rather lighthearted one, while the last letter was quite serious in tone and content.

2.2.3. Turn-around time

Most administrators working in distance education today seem to put emphasis on reducing the turn-around time of the written assignments. Turn-around time is the lapse of time from when the student sends in the answer until the feed-back from the tutor is received by the student. In most cases this time often tends to be relatively long. Delayed feed-back is considered to be an evident weakness in distance study (Holmberg 1977). The illustration below probably shows the most usual system for handling the student assignments in correspondence institutes.

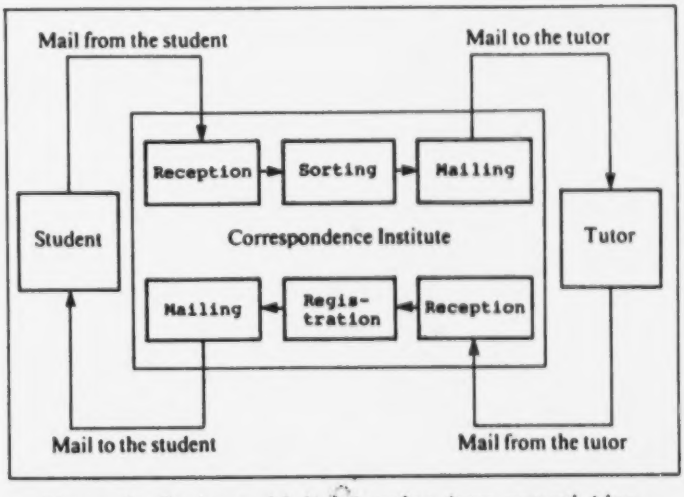

Figure 1. Factors which determine turn-around time.

Sloan (1965) reports that the time element involved in the feedback and getting answers to questions resulted in disinterest. In another survey (Harter 1969) the instructor's late return of corrected lessons was the most frequently mentioned reason for non-completion of study. This problem was also dealt with in a questionnaire distributed by the European Council for Education by Correspondence (CEC). The results showed that the average length of time from the school receives the student answers until they are returned is seven days. Consequently, the average turn-around time can be estimated to be approximately 10 days. (Saxe et.al. 1966).

Nilsen (1969/1974) discusses whether the two-way communication in correspondence education may be seen as a practical application of the reinforcement principle as developed in Skinner's theory of behaviour control. Husén (1960) has pointed out that the tutor's corrections and comments in distance education cannot be considered as reinforcers in this sense, since they reach the student too long after the response has been given. Bååth (1979) takes the position that ".... it appears quite possible to design correspondence teaching according to Skinner's behaviour control model. If so, the postal two-way communication must of course be thought of as having other functions than making reinforcement of students' responses possible". (Bååth 1979, p. 23).

Even if the assignments do not constitute any means of reinforcement, other factors, such as information about results and motivation of the students to study, are important. In this respect we also feel that a rapid turn-around time of assignments is essential..

In a project concerning optical reading of multiple choice answers and comments written by an automatic typewriter, (Bååth 1971) the turn-around time was reduced from approximately 10 days to 4.4 days. Turn-around time was not treated as experimental variable. Consequently, one does not know whether the positive results in the experiment were a result of the new treatment of the assignments or the reduced turn-around time. However, it was concluded that reduced turn-around time results in more satisfied students. Students who received answers within 5 days were satisfied without exception. While 21 out of 59 students who received their papers after more than 7 days found this to be too slow.

At NKI we have carried out an experiment where the time for internal treatment was varied. A questionnaire showed that the median turn-around time, as reported by the students, was reduced from 8.3 to 5.6 days. The correlation between the experimental variable, turn-around time, and the criterion variable, completion, was significant on the .001-level. We also found that a faster turn-around time in the experiment had a positive effect on "the total number of assignments submitted during the 3 first study months" (p .05). The correlation with "pace of study" was positive, but not significant. Concerning the students' opinion, we concluded that students who received their assignments within 7 days or less, are satisfied. Some actually express a very positive attitude. Many of the students express that 8 days or more for feed-back is too long (Rekkedal 1973b, 1983). Thus, one week seems to be the turn-around time limit accepted by the majority of correspondence students (see also Bolstad

(1973), Bååth & Månsson (1977)). In our opinion, correspondence institutes should aim to develop a system which would guarantee that the students would receive their papers back corrected and commented upon within one week. However, if appropriate action is not taken, this goal cannot be achieved.

2.2.4. Tutoring by telephone

The telephone can be a useful means of communication in distance education. This is shown by several examples in a report from the University of Wisconsin (Parker & Riccomini, undated). In two reports from the EHSC project on "Two-way communication in correspondence education" Flinck (1975, 1978) mentions four ways of using the telephone in distance education.

1. Teleteaching - is operated by a two-way loudspeaking telephone placed in the classroom. Students not present can listen to the teaching going on in the classroom, and can even contribute in the verbal activities.

2. Telelecture - also operated by a two-way transmitter. The teacher can give a lecture to groups or individuals located any place that can be reached by telephone. Two-way communication is possible for all involved students by using loudspeakers and microphones.

3. Dial access - is an information service system more than a teaching system. It provides students with brief summaries on different topics.

4. Teletutoring - enables an individual student to communicate with the tutor and receive individual help during the studies. The discussions are always between one student and one tutor. (Flinck 1978 pp. 24-25).

This last mentioned system is of special interest in connection with individual distance study. This system is used for instance by ICS in Scranton (see Rekkedal 1974), where all corrspondence students can call their tutors free of charge.

In his review of the literature, Flinck (1975) shows that teletutoring has been tried out in many different connections. Ahlm (1972) conducted an experiment on teletutoring among students studying mathematics by correspondence. Only 12 percent of the students made use of the offer of calling their tutor. The results indicated, however, that the students who really called, achieved better results in their studies (no cause-effect relationship proved). Generally, it seems that only a minority of distance students make use of the telephone when this possibility is offered. In his thesis reporting from an experiment where the tutor took the initiative to the telephone contacts, Flinck concludes:

"To sum up we can establish that tutoring by telephone has been experienced positively by those students who received it. It has mainly been used to treat subject related problems but it has at the same time given the students an opportunity to discuss personal or social problems, a possibility which might have contributed to the students' feeling less isolated in their study work. We have also established that with the arrangement we have used in this investigation tutoring by telephone has been of greater advantage to students studying a foreign language than to students studying a subject belonging to the social sciences". (Flinck 1978, p. 115).

Positive experiences from teletutoring are also reported by Burge (1984) from a distance teaching project in Canada:

"Students rated individual telephone work with the instructor much more positively than they did with group telephone work. The individual telephone talks enabled learners to resolve difficulties, clarify objectives and directions, get quick feedback, and reduce anxieties". (Burge 1984, p. 12.).

Bååth (1979) has analysed which educational functions the telephone may have in correspondence education. We will briefly repeat some of Bååths' views with emphasis on the starting phase:

"The greatest potential value of telephone contacts as a supplement to correspondence teaching seems to lie in the opportunities to establish individual and individualized contacts between tutor and student provided by the tutoring by telephone ..... applying a model such as Skinner's, telephone tutoring could fulfil a certain function - to help the tutor to get to know the individual student .....

According to Rothkopf's model, telephone tutoring could - above all - help students to get started. .....

Also according to Ausubels' model, individual telephone contacts could apparently be of some use in the starting phase of the course" (Bååth 1979, p. 116).

Bååth also discusses teaching by telephone in the light of other teaching models where the starting phase is not explicitly mentioned, however, general principles in the different teaching models would be of great importance also in the starting phase. This holds for instance for individual counselling and guidance where Bååth says:

"With regard to cognitive learning goals, individul guidance over the telephone would appear to be valuable as a medium for the fulfilment of the following Gagné teaching functions:

- activating motivation
- directing attention
- stimulating recall of relevant prerequisites

- providing learning guidance
- providing feedback". (Bååth 1979, p. 117).

2.2.5. Social isolation

The problem of isolation is related to most of the research mentioned in the preceding paragraphs and also to the work of the correspondence tutor in general, which we will discuss later on (2.3.). This problem is discussed by Wångdahl (1980). The feelings of isolation result from the fact that the individual correspondence student normally must do the work without direct contact with the tutor or fellow students.

As shown in paragraph 2.1.3. the isolation problem may not seem to be an important one when former students state their reasons for discontinuation. However, many of the problems normally mentioned by students and by researchers in drop-out studies could, in our opinion, be described as aspects of the isolation problem. Some correspondence students actually choose this study method because they want to study on their own. The reasons for this may differ from one individual to another. Some students do not want their friends, colleagues or employers to know that the are studying, or they are afraid of the classroom situation, possibly because of previous failures.

Wångdahl (1980) states that "for these students social isolation is an advantage rather than a disadvantage". We feel that it remains to be seen whether this assumption really is correct. In an earlier study (Rekkedal 1978a) we found that all of the 14 students who at the time of enrolment wrote that the main reason for choosing correspondence study was that they preferred to study alone, had dropped out. These students also constituted the second least successful group measured by the total number of assignments submitted during the studies.

The problem of isolation is also mentioned briefly by Flinck (1978), who reports that 38 percent of the students admit that they have experienced the feeling of being isolated (5% "to a large extent"), while in fact 50 percent deny that they have felt isolated (27% "not at all"). (Flinck 1978, p. 132).

In principle, the isolation problem in correspondence education can be solved or reduced through efforts within a pure system of distance education, such as telephone contacts, other tutor activities (see next paragraph), study groups etc, or through efforts which in fact involve non-distance teaching such as local counselling, study center activities or combined education.

Ness' (1976) findings indicate that face-to-face teaching combined with correspondence education has a positive effect on completion rates. In Norway, where this kind of combined teaching developed rapidly during the 70's, there has been a debate on whether the introduction of face-to-face teaching in a distance education system really is an advantage in distance

education and to distance students in the long run (e.g. Skår 1977, Svendsen 1977). We will not enter this discussion here, but we feel that distance educators ought to believe in the possibilities and advantages of distance study methods and also in the students' capability to learn without having a teacher geographically present, so that efforts also are channelled into attempts to develop new ways of serving the distance learners within the limits of distance education.

2.3. The correspondence tutor

Although distance educators seem to agree that two-way communication between student and tutor is one of the very important, if not the most important aspect of correspondence education, relatively few reports from research on the tutor's tasks and functions are published. Further, systematic correspondence tutor training does not seem to be given priority by most distance teaching institutions. This is not in accordance with the relatively common view that an experienced classroom teacher or a subject specialist will not automatically become a good correspondence tutor. In Norway two correspondence schools, NKI and NKS, have developed correspondence courses to qualify their prospective tutors for their work (NKS 1978, Rekkedal 1978b). The NKI training system has been described in previous papers (e.g. Qvist-Eriksen & Rekkedal 1983).

Bååth & Wångdahl (1976) have discussed the functions of the correspondence tutor in the light of a model for correspondence education, as shown below:

		Preproduced material: Little weight (-)	Preproduced material: Great weight (+)
Student-tutor dialogue at a distance: Little weight (-)		CE, type 1	CE, type 2
Student-tutor dialogue at a distance: Great weight (+)		CE, type 3	CE, type 4

Figure 2. A categorization of principal types of correspondence education (Bååth & Wångdahl 1976).

Type 1: Little weight is attached to both the didactic design of the material and the provisions for student-tutor dialogue. This type of correspondence education would be very similar to self-study.

Type 2: Great importance is attached to the design of the course material to make it suitable for distance study, while two-way communication is considered less important.

Type 3: Here, great weight is given to the relationship between student and tutor, while the material used is not specifically designed for distance study.

Type 4: Great importance is attached both to the material in order to make it suitable for distance learning and also to the two-way communication betweeen student and tutor.

We feel that, in order to develop correspondence education methods in the future, we must concentrate on type 4 as described by Bååth and Wångdahl. In the experiment described here, however, we will concentrate on the tutor-student relationship, while other schools that take part in the cooperative project in which this experiment is one part, will concentrate their research on developing efforts within the preproduced material to reduce the number of non-starters and early withdrawals.

Sjogren (1963) has conducted an experiment where three types of tutor behaviour were examined on the hypothesis that a more extensive feed-back would result in better student performance. For one group of students the tutor only corrected wrong answers and showed where the student could find the right answers. The second group received corrections, as well as subject related and encouraging comments. In the third group the tutors tried to establish a personal and supporting relationship as well, through individual comments and personal letters. No significant relationships were found between tutor behaviour and course completions.

Holmberg (e.g. 1983) has put forward a theory concerning distance teaching as a method of guided didactic conversation. The theory is based on seven postulates, some of which deal directly with the tutor's personal ways of interacting and communicating with the students. In our opinion the organization of the tutor's responsibilities in the experiment increases the possibility of satisfying the criteria of guided didactic conversation.

At NKI and NKS two parallel experiments were carried out to examine the effect of introducing preproduced comments and solutions in addition to the tutor's individual corrections and comments (Rekkedal & Ljosà 1974). The hypothesis was that the preproduced material would release the tutor from repetitive work and thus make it possible for him/her to concentrate on satisfying the individual needs of the students. In one of the experiments a significantly larger number of the students who received the preproduced material completed their courses, while no significant differences were found in the other. Both experimental groups expressed extremely favourable attitudes towards the preproduced material as an extra offer.

How is the tutor's role normally perceived by the correspondence students? Some researchers have tried to answer this question. Grahm (1969) found that the students expressed favourable attitudes towards the assignments for submission. Nevertheless, in the way correspondence education is

organized today, the tutor's work is ranked last of the following components: the text, the self-check excercises, the assignments for submission and the tutor's corrections and comments. This low ranking of the tutor's work holds both for its instructional and for its motivational value.

In the survey reported by Glatter & Wedell (1971) the students were critical towards what they had experienced concerning the work of their tutors. The majority did not agree with the following statements:

> "The lecturers or tutors quickly spot students' difficulties with their studies".
> "Comments on written work are full and explain faults clearly".
> "The tutors or lecturers take personal interest in the students' progress".
>
> (Glatter & Wedell, 1971, pp. 102-103).

From these findings, Glatter & Wedell (1971 p. 103) conclude:

> "The work of the correspondence tutors is rated disconcertingly low on these three criteria, although college lecturers, with all the advantages accruing from direct personal contact are seen in little better light. As far as correspondence is concerned, these responses point clearly to the need for a study of correspondence tutors and the special problems and skills associated with their work".

In our longitudinal survey at NKI we asked a number of questions, in the same way, in an enrolment questionnaire and in a follow-up questionnaire mailed at the time of completion or cancellation. Our intention was to try to find possible differences in the students' expectations and real experiences concerning certain aspects of correspondence study. The answers to the question about the tutor's corrections and comments were distributed as shown in table 1.

Table 1. "The tutors' corrections and comments will be/have been...." (Rekkedal 1978a)

	Enrolment questionnaire %	Follow-up questionnaire %
Very satisfied	26	20
Satisfied	63	56
Neutal	12	17
Dissatisfied	1	7
Very dissatisfied	0	0

The results indicate that the expectations are not totally fulfilled for all the students, but even after the studies the majority seems to have a quite positive attitude concerning the work of their tutors.

When the work of the correspondence tutors is not always appreciated by the students, this may be a result of what we consider to be the discrepancy between the value attached to this part of correspondence study in theory, and how the tutors' role is arranged in practice. Harris' (1975) survey showed that most of the British correspondence tutors are part-time employed (99%), that there are few training facilities available for these tutors, and that normally they are paid a fee per assignment corrected and commented. Tutors may often feel just as isolated as the correspondence students, and their tasks may become a routine, partly due to the division of work, which seems to be a characteristic of correspondence education. That the industrialization of education which has happened in modern correspondence education may involve certain risks is pointed out by Peters (1973). Even if such a specialized organization may be financially effective, it may lead to alienation on both the part of the tutor and the student.

We have also earlier discussed the role and functions of the correspondence tutor in the light of the same problems (Grepperud & Rekkedal 1976), where we tried to put forward some ideas of a new correspondence tutor role which we felt might result in an increased quality of distance education in the future. To some extent, it is this role which is tried out in this experiment.

Therefore, we shall repeat some of the conclusions:

> "We have investigated the tutor's role in correspondence education today, the status, wage-conditions as well as administrative organization, problems in connection with part-time work, and ways to solve some of these problems.
>
> We wish to discuss how the relations between tutor and correspondence institute should be organized. If correspondence schools in the future are to be able to cover the desired range of subjects, it will be necessary to base tutorial work on part-time tutors and these must, to the greatest possible extent, be offered satisfactory training, wages and conditions of employment. If, however, the tutor in the future is to hold a central position in the correspondence teaching system, we believe that correspondence schools too should rely on permanently appointed full-time tutors or people having correspondence tutoring as their main profession when possible. The conditions for organizing such a system are among others:
>
> 1. Size of institute and number of students.
>
> 2. Upgrading the role, status and prestige of the tutor.
>
> We believe that few professionals today would accept work as full-time correspondence tutors. This is due to the low status of the

"profession", its terminology and traditional expectations of the tutor's work, such as correction and marking. We believe that serious work as tutors in distance or correspondence education can be just as inspiring and challenging as the work of any other teacher. There should hardly be any difficulties in recruitment to this profession.

Engagement of full-time tutors or establishing a recognized profession of correspondence tutoring would include a number of advantages:

1. It would lay the basis for serious and extensive training for the profession. See for instance Lamacraft's (1975) suggestion of training for correspondence tutors which consists of 450 teaching hours plus independent studies and different educational work at a correspondence institute including tutoring under supervision.

   A correspondence course for tutors having other relevant training in education would include 200-300 hours of specialized training for correspondence teaching.

2. The system would exclude most problems concerning wages and turn-around time.

3. The system would supply the method of distance education with know-how and professionalism, that we to some extent are in lack of today, because people with a first-hand knowledge of the methods and the learning problems of the students are only loosely attached to the correspondence institute which is responsible for the development and administration of the teaching system.

4. Professional full-time tutors should be able to spend their time partly on the training of other tutors, general counselling, course writing, editing and development, duties which today are taken care of largely by people having little experience of correspondence tutoring.

5. Office hours for tutors would make it easier for the students to contact their personal tutors in other ways than by letter, e.g. by telephone."

(Grepperud & Rekkedal 1976, pp. 10-11).

What we tried to describe was a tutor role in correspondence education which closely integrated the teaching and student support activities.

2.4. Counselling

The term counselling may have a range of different connotations for different people. In correspondence education, tuition normally means marking of and commenting on assignments, and in some cases, also other tutor-student contacts, such as face-to-face, telephone and audio cassettes

as additional elements. By counselling we understand all other interactions between student and institute which are not strictly subject related. The counselling function thus embraces advice on general problems caused by part-time and correspondence study, course choice, future vocational possibilities and choices, and further education, examinations, registrations, financial support and payment (except routine installments). In other words, counselling in distance education covers activities which under another broad term can be described as student support services (Tait & Sewart 1983).

Some correspondence institutes do have special counsellors/advisors responsible for this kind of work, however, few, if any, employ professional counsellors to take care of more serious personal problems in the students' lives, activities which by some writers are not included in the term counselling in distance education (see e.g. Sewart 1983).

At NKI we have organized a counselling department responsible for the non-tutorial activities mentioned above. This system has proved to function fairly well. Nevertheless, the counsellors have not been able to give advice in subject related matters, and we have experienced a need for integrating the functions of the tutors and the counsellors. This need is fully recognized by Paine (1983) who presents an overview of guidelines for distance learning systems:

"....

a. Tutoring at a distance is not the same as college based tutorial work. It inevitably includes an element of counselling.

b. Tutoring and counselling skills at a distance can be taught.

c. Tutoring at a distance does not only consist of marking and commenting, although this constitutes part of it. Even this clearly defined tutor role can have a counselling element".

(Paine 1983 pp. 17-18)

The Open University has organized a system of tutor-counsellors during the foundation year. During their foundation year students are assigned to a local tutor-counsellor, who will normally be responsible for both tuition and counselling (see Sewart 1980, Simpson 1977, Field 1978, Keegan 1981, Carr 1983). According to Sewart, this system, which originally developed from a system where tutor and counselling functions were taken care of by different persons, has proved to be extremely efficient:

"By these means, the University maintains a personal and continuing concern for, and interest in, each of its students. This element is arguably more developed in the Open University than in any other distance teaching system. Indeed, it is in this element alone that the Open University is now unique. There are, at present, many similar institutions offering a teaching package, normally written materials, but sometimes also with audio-visual support through broadcasting or

cassette, and some of these teaching packages are similar in standard to the Open University's teaching material. I am aware of no comparable support service for students learning at a distance. It may well be, therefore, that it is this individual support system which is the all important ingredient in the low drop-out rate which continues to elude other distance teaching systems".

(Sewart 1978, p. 177)

As a result of the discussions carried out in the preceding sections, we find it highly relevant to experiment with a "new" tutor role within the framework of correspondence education. In the role of this tutor we try to integrate the functions of administrative measures, tuition and counselling.

3. EXPERIMENTAL PROCEDURES

In this experiment we will try to integrate a number of variables which, according to earlier empirical and theoretical research may have a positive effect on study activity and completion rates in distance study.

The paper mentioned in the preceding chapter (by Bååth & Wångdahl, 1976) is concluded as follows:

> "Maybe the tutor's role has to be changed at many schools, if they seriously want to provide correspondence education of that type where great weight is attached not only to the didactic functions of the pre-produced course material, but also to the dialogue between student and tutor with its supposed motivational function". (Bååth & Wångdahl 1976, p. 26).

The main intentions of this experiment are to construct a "new" way of organizing the tutors work during the initial phases of the correspondence study. In principle, this organization of the tutor's work may as well be introduced for students who have passed this stage. The reason for choosing the initial stages is that research has shown that the start of the studies involves great problems for many students and seems to be crucial for later study success.

The students selected for the experiment will during the first stages of their studies be assigned to a personal tutor who will follow them through all their courses during a certain part of the program. (The formal structure of the courses is explained in section 4.1.). The result of this organization will be that a number of aspects of the tutor's work will be different from the work normally undertaken by the correspondence tutor.

In connection with the description of the experiment we must stress the fact that, for the past 10 years, NKI has taken the consequences of findings from theory and empirical studies conducted at NKI, and elsewhere, which already have led to developments of the tutor's role, counselling and follow-up of students. The students selected for the control group in this experiment will not lose any of these measures.

The main difference (i.e. the independent variable) between the treatment of the experimental and the control group is that the experimental group will communicate with one personal tutor who integrates all the teaching and counselling functions, and consequently constitute an educational offer which we assume to be more efficient. In the following paragraphs we will try to describe the experimental role of this tutor which then constitutes the experimental variable under examination.

3.1. Personal tutor

Correspondence education has developed into an activity where the tasks to a large degree are divided between departments and individuals responsible for very specialized functions. Thus Peters (1973) considered

correspondence education to be an industrialized form of teaching. In modern correspondence education also the teachers functions have been divided. Another part of the total picture is the subject specialization between tutors. Most correspondence tutors teach one or a few subjects. Students studying more than one subject will normally have a number of different tutors, who will all feel responsible for their own part of the whole system. With a reduced insight in the total system and lack of understanding of the student's total situation, it is difficult for the tutors to give maximum support. On the other hand students get confused and they do not know where or from whom they can receive help to solve different problems which might arise.

At NKI we have from time to time discussed the possibilities of arranging the system so that the student would communicate with one tutor only during a certain part of the studies. One of the drawbacks would be that the tutor would have to teach more han one subject and consequently do a less specialized job. However, we believe that the advantages are evident. The tutor's work would become more varied, the tutor and the student would get to know each other better, the tutor would know which courses the students studies, which courses the student has completed, his/her grades, strong and weak points etc., and which courses the student will proceed to. The tutor may point out relationships between different subjects and courses and help the student to transfer the knowledge gained through one course to another. This organization also opens possibilities for the tutor to act as counsellor for the student (see below).

3.2. Employment

Correspondence tutors are normally paid on a per assignment basis. It is difficult to decide which consequences this financial arrangement leads to concerning the work done by individual tutors and in general. However, we can easily think of negative effects on the quality of teaching (Rekkedal & Grepperud 1976). Harris says in this connection:

> "In almost all cases the payment to tutors may be on a per student basis, but normally on a fee per script, or essay submitted to the tutor. This has obviously educational disadvantages, related to the length of student script or written assignment and length of tutor comment. Yet there appears to be few practical alternative bases of payment".
>
> (Harris 1975, p. 5).

The tutor in the experiment is employed on a fixed salary basis, and we believe that this fact in itself has a positive effect on the organization of the teaching; e.g. that the time allocated to the individual assignment to a larger extent will be in accordance with the student's need for corrections, comments and advice.

3.3. Integrated tutor - counsellor

In the experiment the personal tutor works full-time within the school's offices together with the student counsellors. The counsellors will normally not possess sufficient subject knowledge to help the students with subject related learning difficulties. To a certain extent this part of the student-counsellor contact, therefore, may turn out to constitute some kind of "pseudo counselling", i.e. general statements and general advice, which might make the student feel less isolated, but which does not really help the student with the actual planning and organizing of the studies or solving the student's learning problems.

When students in the ordinary system of correspondence education make contact with the school concerning their learning problems, the administration will have to refer to the tutors. Consequently it will normally take some time before they can get help. At NKI we have found that this might constitute an important problem. In a follow-up questionnaire the three most frequent answers to an "open ended" question on what is "the largest disadvantage" in correspondence education were:

"Too long time to get answers to questions, too long turn-around time — 18 %

Too free, easy to put the studies aside, free study tempo — 16 %

Lack of contact with tutor and/or school — 13 %"

(Rekkedal 1978a, p. 117)

In the same survey student counselling was the element of correspondence education where the students' attitudes changed most from the period of enrolment to the follow-up questionnaire.

Table 2. "The counselling of the students will be/was": (Rekkedal 1978b, p. 108)

	Enrolment questionnaire %	Follow-up questionnaire %
Very good	32	9
Good	49	41
Average	16	34
Below average	3	8
Bad	0	8

In a system where the roles of the tutor and counsellor are integrated in one person, this person can immediately start working on the student's problems, whether these concern subject matter, learning problems, personal difficulties, adminstrative procedures or financial matters. The tutor will also be in a position where his/her experience with the student increase the possibilities of giving sound advice.

In fact, we believe that the introduction of a personal tutor and the integrated role of the tutor-counsellor constitute the most significant aspect of the experimental variable. This aspect is also a necessary condition for the other variations from the normal organzation included in the experiment.

3.4. Turn-around time (circuit time)

The turn-around time of assignments in the system of correspondence education is illustrated graphically in Fig. 1 (2.2.3.).

A tutor working full-time within the adminstration may reduce the turn-around time significantly. Firstly, we may guarantee that the assignments are corrected and commented the same day as they are received. Secondly, two postal handlings are removed from the system. In the study mentioned earlier (Rekkedal 1973b) the reduced turn-around time of 3 days was achieved by a similar procedure. If the tutors working part-time at home do not manage to return the assignments the same day, the reduction of turn-around time in the experimental system will be even larger.

We would like to stress the fact that all tutors working part-time at NKI are directed to return the assignments after maximum 1 day as the normal procedure. In the NKI course for correspondence tutors (Rekkedal 1978b) the importance of reducing the handling time of the assignments is greatly emphasized, and we feel strongly that most tutors understand this, and that they do their best to live up to the expectations.

3.5. Tutoring by telephone

Tutoring by telephone is systematically included in the experiment. The tutor will phone all students, who have given their telephone number, both as part of the teaching, i.e. in connection with the students' answers to the assignments, and as part of the follow-up routines for students in the beginning of the courses and as one of the means in the continuous and systematic follow-up of inactive students during the whole course. During the experiment the tutor will try to motivate all the students to give their telephone number and also inform them on how and when telephone contact can be established. This is done through the comments on the student papers and through follow-up letters. In addition, all students are invited to phone the tutor. These possibilities are also described in the "Tutor's presentation" (see 3.8.3).

3.6. Initial follow-up

The tutor will personally contact all the experimental group students approximately 10 days after the dispatch of the study material. If possible, the tutor will try to reach the students by telephone. The tutor will initiate a conversation about the received material, about possible problems concerning the start of the studies, about the courses and about the future cooperation. A form letter will be sent to the other students. (Form letter 1, Appendix 2).

The tutor will contact the students again approximately 1 month later. During the telephone conversation the tutor will then discuss the student's work/lack of work, possible problems and/or other matters raised by the student. Again, students who have not been reached by telephone will receive a form letter (2A if they have not yet submitted any assignments, 2B if they have started).

At NKI one of the consequences from the results of earlier research is that all students are followed up during the initial phases of the study. Thus, as part of the normal routines the control group will receive a form letter signed by one of the counsellors approximately one week after enrolment and another letter one month after enrolment. The last one is printed in two different versions, one meant for students who have not started and one for students who have submitted at least one assignment. The difference between the experimental and control groups, therefore, is mainly a question of the degree of individualization that can be achieved through the personal tutor/counsellor.

3.7. Follow-up of inactive students

All students studying correspondence courses at NKI are involved in a continuous follow-up program. This program which consists of a sequence of three contacts to inactive students, was described in paragraph 2.2.2.

The experimental group students in this project are followed up in a similar way. The main difference is again that the contacts are established by the tutor-counsellor, personally by telephone or through individualized letters. The contents will then depend on the student's work, the earlier cooperation etc..

3.8. Other aspects of the tutor's work

3.8.1. Introduction to study techniques

All students studying course compositions at NKI are requested to start by completing an introductory course in study techniques. The course contains one single assignment for submission. The tutor in this experiment will also take care of evaluating and commenting upon the work done by the experimental group students in this course. There are no other differences between the groups with respect to this aspect of the teaching system.

3.8.2. Preproduced tutor comments

The use of preproduced comments is not systematically defined in the experiment. However, complete and detailed solutions to all assignments including some standard comments are developed for all courses included in the experiment. The tutor will enclose them with the corrected papers according to his judgement of the students' individual needs.

3.8.3. "Tutor's presentation"

All the NKI's part-time tutors have to prepare a personal presentation of themselves. This tutor's presentation normally includes a photograph of the tutor. The presentation is sent to the student as a matter of routine, and is enclosed with the first assignment returned from the tutor.

Students in the experimental group will receive this tutor's presentation immediately after enrolment. The tutor's presentation also describes the tutor's role and functions and the possibility of reaching the tutor by telephone. Consequently, these students will in fact be able to establish contact with the tutor themselves, even before submission of the first assignment. If they don't contact the tutor when problems arise, the tutor will contact the students in any case. This possibility may be important when one is trying to reduce the number of non-starters. (See appendix 3 for Tutor's presentation).

3.9. Summary of the tutor's role in the experiment

As described in the preceding paragraphs, the experimental variable represents an integrated series of efforts which we believe will have positive effects on the study situation. We also believe these effects to be general. The experiment is concentrated on the initial phases because this period is considered to be extremely important for study success or withdrawal.

Because of the complex nature of the experiment variable, possible differences concerning results/rate of withdrawals/completions etc. cannot be ascribed to one single aspect of the experimental variable. In this experiment, it is the combination of different efforts and the organization of the tutor's role as a personal tutor/tutor-counsellor which is compared with a "traditional system" including part-time correspondence tutors. Table 3 gives a survey of the experiment variable compared with the treatment of the control group. Table 3 gives a description of the experimental variable (X_1) and the control variable (X_2).

Table 3. The experimental and control variables

Aspect	Experimental X_1	Control X_2
1. Tutor	One tutor during the 3-11 first single course	Different tutors (the tutor can teach more than one course)
2. Employment	Full-time employed on a fixed salary working within the institute	Part-time employed working at home on a per assignment basis
3. Teaching/ counselling	Integrated tutor - counsellor. Same person responsible for teaching and counselling	Tutor normally responsible only for correcting and commenting on the assignments. Separate counsellors take care of general problems
4. Turn-around time	All assignments are returned to the students the same day they are received by the tutor (delays reduced to a minimum)	Emphasis on reducing turn-around time. The tutors are requested to return the assignments within one day. Nevertheless, two extra postal services normally included
5. Introduction to study techniques	Same tutor teaches the one unit course in study techniques	Separate part-time tutor also for this course
6. Initial follow-up	All students will be contacted 10 days, 1 month and 2 months after enrolment, preferably by telephone. Letters are sent to students not reached by telephone. Two different versions of the first letter depending on start/non-start. Last letter is a personal one. All contacts made by the tutor	All students are followed up about 1 week and 1 month after enrolment by printed form letters signed by a counsellor. Two different editions of the last letter, depending on start/non-start

Table 3. Continued

7.	Follow-up of inactive students	All students contacted by telephone or individual letter after one month of inactivity, if necessary in a sequence of three contacts during three months	All inactive students are followed-up in a sequence of one printed card and 2 form letters with a printed signature during three months
	Students in both groups are treated individually if they apply for an interval in their studies or before cancelling the study contact		
8.	Tutoring by telephone	All students are invited to call the tutor during normal office hours. The tutor takes the initiative to telephone contacts as part of the follow-up system and when needed in connection with the assignments	Some tutors invite the students to contact them by telephone. No other initiative is taken from the tutors
9.	Preproduced tutor comments	Preproduced comments developed, used when needed	No systematic use of preproduced comments
10.	Tutors's presentation	The presentation is enclosed to the students with the first study material	The presentation of the different tutors is enclosed with the first assignment returned from the tutor

4. RESEARCH DESIGN AND PROCEDURES

4.1. The courses and the selection of students

The NKI course compositions consist of a number of single correspondence courses which constitute a complete educational program preparing the students for different technical vocations.

The course compositions are formally structured into different levels and sublevels. The introductory level is divided into 3 parallel streams dependent on the student's previous education. The structure is illustrated in Fig. 3 below:

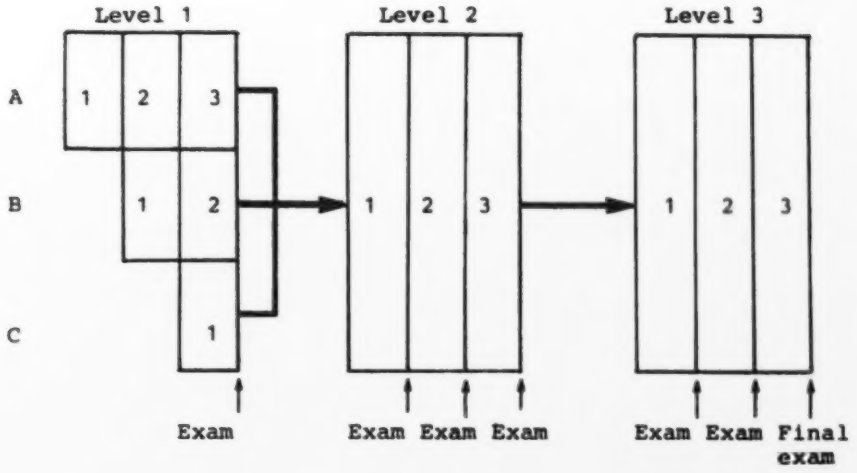

Figure 3. The structure of the NKI course compositions.

Students enrolled for stream C, those who have the highest level of previous education, were not included in the experiment. Because the students' previous schooling varies more than can be catered for by this system, the individual student may be exempted for additional courses within the first level. Students who were going to study less than 3 courses plus study techniques, were not included in the experiment.

New enrollees were selected into the experiment during the period from 01.11.1980 to 01.03.1981. The first sublevel of the streams A and B contains from 5 to 11 single courses. Totally, approximately 40 different course compositions containing 28 different single courses, plus the introductory course in study technique, were included in the experiment. The courses are basic ones and can be taught by one single tutor, who has competence within basic technology and administrative subjects.

The tutor chosen for the experimental group had previously been employed as a part-time tutor. Based on ratings from the guidance forms used to give feed-back to the tutors', the quality of his work had been average (Rekkedal & Qvist-Eriksen 1978), a fact that would increase the validity of the experiment. However, it can never be fully proved whether possible differences between the groups result from the experimental variable or from personality or quality differences.

4.2. Research design

One experimental and one control group were established by randomization, based on the last digit of the student identification number. As we wanted a relatively large experimental group, students having last digits 1, 2, 4, 5, 7 and 8 were assigned to this group, while students having last digit 0, 3, 6, and 9 were assigned to the control group. The design takes this form:

E : R X_1 O_1

C : R X_2 O_2

E = Experimental group

C = Control group

R = Random selection into groups

X_1 = Experimental variable

X_2 = Treatment of control group

O_1 and O_2 = Measures of study success, rate of completion, student attitudes

In addition, we will try to assess other effects and consequences, i.e. costs, organization, tutor attitudes etc.

4.3. Questionnaire design and collection of data

A minor questionnaire was developed to assess the students' attitudes. The questionnaire contains questions about the correspondence study in general, the tutor's work and counselling to examine whether different aspects of correspondence education are experienced differently by the students in the

two groups, or whether their subjective experiences as measured by the questionnaire are more or less similar.

The questions have been taken partly from earlier surveys at NKI (Rekkedal 1973b, 1978a) and partly adapted from similar questions used in the "Two-way communication in correspondence education" project (Flinck 1978, Bååth 1980). See Appendix 1 for a copy of the questionnaire. Regrettably, we did not have time to try out the questionnaires before using them in the experiment. We do not expect this fact to cause special problems, as both the questions and the data collection methods have been tried out under more or less the same conditions. During the experiment the questionnaires were mailed to the student, enclosed with the last assignment corrected and commented on by the tutor. Students whose courses were cancelled during the (trial) period of the experiment received the questionnaire at the time of the cancellation. The rest of the students received the questionnaire when the experiment was brought to an end, late autumn 1981. A reminder was sent to students who had not returned the questionnaire within approximately 14 days.

Other data was collected from the files and study records, and from minute records kept by the tutor on follow-up letters, special measures, phone calls, and use of preproduced comments.

4.4. Statistics/data processing

The data collected from the experiment are considered to be of either nominal or ordinal scale types. When possible the criterion variable is divided into three categories, as recommended by Galtung (1967). The data are tested for statistical significance, where we according to normal statistical conventions consider differences below the probability of 5 percent to be statistically significant (Ferguson 1966, Guilford 1965).

We have chosen to apply Goodman-Kruskal's gamma (γ) to measure correlations between ordinal scale variables (Goodman & Kruskal 1954, 1963), while nominal scale variables are tested for statistical significance by chi-square calculations (Henrysson 1965).

All data were processed at the Computer Centre of The University of Oslo. χ^2-calculations undertaken by hand are presented with two decimals. Values of χ^2 , γ and p given by the computer are given with three decimals.

4.5. Summary of the problems to be investigated

In this report we have presented some problems concerning non-start, early withdrawals and drop-out in correspondence education in the light of previous research and theoretical studies. We have also discussed ideas about how we believe that some of these problems can be reduced by introducing a "new" tutor role into the system of correspondence education. An in depth description of this tutor role has been presented, where the functions of this "personal tutor/counsellor" also is compared with what, in our

opinion, seems to be the more usual "subject specialist teacher" in correspondence education. In the role of the personal tutor/counsellor we have tried to integrate a number of functions normally carried out by different persons in a "specialized and industrialized" system of distance education and also other measures which we believe may have a positive influence on the quality of teaching.

Very often the correspondence student who has enrolled for more than one single course will have to communicate with one tutor in each different subject, in addition to a number of different people within the institute. The tutor is responsible for commenting on and correcting the student's written answers only. We have pointed out several possible results from assigning the student to one single tutor/counsellor to be the main personal contact from the time of enrolment and through the critical initial phases of study.

As a result of the experiment described here, we hope to find some of the answers to the following questions:

1. Will this organization have any effect on the number of students starting their studies (defined by submitting one or more assignments)?

2. Will this organization have any effect on drop-out rates during the early stages of study?

3. Will this organization have any effect on pace of study and student activity?

4. Will this organization affect student attitudes towards correspondence education in general and specific aspects of correspondence study?

5. What will the consequences of this new tutor role be regarding the organization of other aspects of the correspondence education system as well as the costs of correspondence education? Partly, the answer to this question must be found after an institutional development work to follow after the experiment if the results turn out to be promising).

5. DESCRIPTION OF THE EXPERIMENTAL GROUPS

As mentioned earlier, the students were selected at random for the experimental and control group on the basis of the last digit in the student number. As students with last digits 1, 2, 4, 5, 7 and 8 were assigned to the experimental group and students with last digits 0, 3, 6 and 9 were assigned to the control group, statistically the two groups should contain 60 and 40 percent of the students, respectively.

The validity of the experimental results depends, among other factors, on whether the sampling errors lie within the limits set by the level of significance (Campbell & Stanley 1969). Thus, for control purposes we have examined geographical background (county), sex distribution, previous education, age, time since school completion, number of study units and number of single courses for the students in the two groups. A random selection of the students in two groups resulted in 187 experimental students (66 %) and 96 control students (34 %), a total of 283 students. 10 enrollees who could have been selected for the experimental group and 4 enrollees for the control group were not counted because they returned the material within the 10-days allowed for the students to make the final decision on whether to commit themselves to the study contract or not. A goodness-of-fit test against the theoretical distribution 40/60 gives $\chi^2 = 4.26$. For df = 1, this gives a probability value of $.05 > p > .02$. Consequently, the experimental group did become larger than would have been expected, and the control group smaller. Actually, this fact is of little relevance for the internal validity of the experiment.

5.1. Recruitment from the different counties in Norway

One of the background variables examined was the students' geographical background defined by the county in which they lived. All counties were represented and, in addition, Svalbard. The results are shown in table 3.

Table 3. Geographical distribution

Country	Experimental %	Control %	N %
Østfold	60	40	20
Akershus	47	53	19
Oslo	79	21	19
Hedmark	50	50	8
Oppland	80	20	5
Buskerud	45	55	20
Vestfold	67	33	15
Telemark	64	36	14
Aust-Agder	67	33	3
Vest-Agder	83	17	6
Rogaland	57	43	21
Hordaland	63	36	41
Sogn og Fjordane	67	33	9
Møre og Romsdal	82	18	11
Sør-Trøndelag	87	13	15
Nord Trøndelag	55	45	11
Nordland	78	22	23
Troms	82	18	11
Finnmark	78	22	9
Svalbard	67	33	3
TOTAL	66	34	283

To avoid problems arising from small theoretical cell frequencies, counties with less than 14 students are grouped together when calculating chi-square values. $X^2 = 14.68$, df = 10, $.20 > p > .10$. This means that the difference in geographical background of the students in the two groups is not larger than what could be expected.

5.2. Sex distribution

The percentage of men and women in the two samples is shown in table 4.

Table 4. Sex distribution

	Experimental %	Control %	N
Male	95.2	89.6	264
Female	4.8	10.4	19
Total	187	96	283

χ^2 = 2.394, df = 1, p = .125,
γ = .39, p = .051

The percentage of women in the groups is low, but doesn't differ very much from what could be expected. The NKI courses mainly consist of technical subjects and therefore they traditionally recruit a much larger percentage of men than women. Previous surveys have indicated the following percentage of women: 1.9 in the 1967/68 population (Rekkedal 1972a) and 5.8 in 1972/73 (Rekkedal 1976). 19 of 283 gives 6.7 percent women in the experimental and control group together.

The different ratio of women in the two groups is not larger than the limits set by the level of significance, although the value of γ is close to significance. There are relatively more women in the control group. Some previous research has shown that the drop-out rate is larger among men than women (Donehower 1968, Ness 1976, Duby & Giltrow 1978, Woodley & Parlett 1983). For validity control in our experiment it was of interest to examine the relationships between sex and the important criterion variables. We found that measured by the variables "start/non-start" (in fact every female student started), "number of assignments submitted", "number of single courses completed" and "status" (with the two categories "completed/active" and "inactive/cancelled") women performed better than men. Consequently, the effects of a larger ratio of women in the control group counteract the assumed effects of the experimental variable and thus does not reduce the validity of the results from the experiment.

5.3. Previous education

The previous education of the students is presented in table 5. The variable is divided into 7 categories. When computing the

χ^2 - values, some of these are grouped together, as indicated by the dotted lines.

Table 5. Previous education

Previous education	Experimental %	Control %	N
7 years primary school (7-årig folkeskole)	9.1	8.3	25
7 years primary + 1-2 years (7-årig folkeskole + 1-2 år)	20.3	18.8	56
9 years comprehensive	16.0	15.6	45
10 years (primary + 3 years secondary) (Realskole)	2.1	5.2	9
9 years comprehensive + 1-2 years (9-årig (realskole) + 1-2 år)	40.1	39.6	113
3 years secondary vocational (3 år yrkesskole)	11.2	10.4	31
3 years theoretical (examen artium)	1.1	2.1	4
Total	187	96	283

$\chi^2 = 2.48$, df = 6, $.80 < p < .90$
$\Upsilon = .014$ $p = .881$

There are no significant differences between the groups measured by the variable level of previous education, as defined in the experiment.

5.4. Age

Table 6. Age

Age	Experimental %	Control %	N
15 - 24 years	35.8	32.3	98
25 - 30 years	29.9	31.3	86
31 - 55 years	34.2	36.5	99
Total	187	96	283

χ^2 = 0.355, df = 2, p = .837
γ = .056, p = .580

The total age distribution differs somewhat from findings in previous survey research at NKI-skolen. For example in 1972/73 49 percent of the students belonged to the age group 15-24 years, while 26.5 percent were 30 years or older (Rekkedal 1976). It should also be noted that previous research has found age to be positively correlated with criteria of success in adult education and correspondence education. In a Swedish study of evening class students, Rubenson & Höghielm (1978) found that persons below the age of 25 disrupt their studies more frequently than do older students. Many studies of correspondence students show that the frequency of dropping out is lower in the older age groups (e.g. Ball et.al. 1966, Donehower 1968, Britain 1972, Harris 1972, Kvam 1975, Rekkedal 1972a, 1978a). For both groups in our experiment we examined correlations between age and criteria of success. It is worth noting that in our total group there is a positive relationship between age and number of courses completed (γ = .242, P = .001), number of study units completed (γ = .212, p = .009), status, (γ = .16, p = .095) and start/non-start (γ = .312, p = .040). All these correlations are either significant or close to significance. As a rule the middle age group performs better than the younger and older groups, while the youngest group has the largest rate of non-start and drop-out and submit fewer study units than the others. This is in accordance with our previous findings (Rekkedal 1978a).

As there are more control students in the middle age group and fewer in the lowest age group, the influence from the age variable should also counteract the influence from the experimental variable.

5.5. Period of time since last school experience

The year when the student last finished a formal period of education was registered. Results are shown in table 7.

Table 7. Number of years since last school experience

Years since last school experience	Experimental %	Control %	N
0 - 5 years (1976-1980)	39.0	36.5	108
6 - 10 years (1971 - 1975)	27.3	29.2	79
11 - 41 years (1939-1970)	33.7	34.4	96
Total	187	96	283

χ^2 = .201 df = 2 p = .904
γ = .032 p = .754

There are only minor differences between the two groups measured by the variable, "Number of years since last school experience".

The students in this experiment are older than the ones registered in previous NKI surveys and the period of time since they had finished formal school experience was longer. For instance, approximately 65 percent of the 1967/68 student body had completed their previous education less than 6 years before they started their correspondence studies (Rekkedal 1972a). For the 1972/73 student body the percentage was over 68 (Rekkedal 1976).

5.6. Number of courses and study units

The length of the course may also have some influence on withdrawal and on how many study units students complete before withdrawing. Generally, we would assume that there would be a higher drop-out rate among students studying longer courses, while these students statistically complete more study units even if they drop out (see Bååth 1980, Pfeiffer & Sabers 1970, Rekkedal 1972a). Tables 8 and 9 show the number of single courses and the number of study units to be completed by the students involved in the experiment.

Table 8. Number of single courses

Number of courses	Experimental %	Control %	N
4 - 7	61.5	62.5	175
8	10.0	7.3	24
9 - 14	29.4	30.2	84
Total	187	96	283

χ^2 = .266 df = 2 p = .875
γ = -.008 p = .949

The median number of courses to be completed by the experimental students, Md = 7.0 while the quartile deviation, Q = 1.60. For the control students these values are Md = 6.7 and Q = 1.65.

Table 9. Number of study units

Study Units	Experimental %	Control %	N
6 - 17	29.9	28.1	83
18 - 22	35.8	39.6	105
23 - 35	34.2	32.3	95
Total	187	96	283

$\chi^2 = .383$ df = 2 p = .826

$\gamma = .002$ p = .981

$Md_{Experimental} = 19.3$ $Q_{Experimental} = 5.1$
$Md_{Control} = 19.3$ $Q_{Control} = 4.2$

There is practically no difference between the groups concerning the number of single courses and study units to be completed during the experiment.

5.7. Conclusion

In this chapter we have examined a few background variables concerning the students taking part in the experiment. These variables are as follows: geographical area (county), sex, previous education, age and the period of time since last school experience. The main reason for examining the students' background is to control that the differences between the experimental and control group do not exceed the limits set by the level of statistical significance. No significant differences were found. However the ratio of women was higher in the control group. The students in the control group were also slightly older. According to previous studies, and this fact is confirmed again by the results of the present study, both these differences would give results in favour of the control group. Consequently, we have not found differences between the groups which would be likely to invalidate our results concerning the effect of the experimental variable. There were only minor differences concerning the length of the course to be compeleted during the experimental phase.

6. STUDY RESULTS

6.1. Introduction/definition of criterion variables

As mentioned in chapter 4, the students who participated in this experiment enrolled for technical course compositions during the period 01.11.1980 to 01.03.1981. Students who planned to study less than 3 courses plus study technique, were not included in the experiment. The students were selected at random into one experimental group and one control group on the basis of their student number.

The experimental variable has been described and discussed in chapter 3. The students' background and differences between the groups have been discussed in chapter 5.

In this chapter we will examine the results of the experiment, in two sections. In section 6.2. we will mainly discuss the results measured by study perseverance variables, while in section 6.3. we will analyse the answers to the questionnaire sent to the students at the time of completion, withdrawal or at the end of the experimental period.

The following variables will be examined:

1. Start/non-start
2. Number of days before submitting the first study assignment
3. Status 8 months after enrolment
4. Status 12 months after enrolment

Status comprises 4 categories: Completed, Active, Inactive and Cancelled. Inactive is defined as not having submitted any assignments during the last three months.

When discussing the status variable it is possible, and in our opinion, valuable, to examine the results by combining the categories in different ways. Consequently, and statistics and probabilities are calculated for different tables:

I	2 x 4 table	(All categories separate)
II	2 x 3 table	(Inactive and cancelled combined)
III	2 x 2 table	(Completed and active combined, inactive and cancelled combined)
IV	2 x 2 table	(Cancelled, inactive and active combined)

In alternative I all categories are treated separately. In alternative II the students who are inactive and cancelled are considered to belong to the same group, and may be defined as drop-outs. This does not mean that none of the inactive students will take up their studies again. However, according to previous experiences at NKI, very few actually do. In alternative III, the completers and the active students are defined to belong to the

same group, which they in fact do, as the completers proceed to the next stage of the course compositions. The active students are then compared with the students who in alternative II may be defined as the drop-outs. In alternative IV, the completers at the specific time are compared with all the students who have not completed.

5. Number of assignments submitted 8 months after enrolment.

6. Number of courses completed 8 months after enrolment.

The reason why status is the only variable that was examined 12 months after enrolment is that in the experiment, all data were originally registered 8 months after enrolment for every single student, but as the data processing was delayed for different reasons, it was possible to collect the status data later and process them together with the data originally collected.

6.2. Start/non-start

Table 10 shows the proportion of starters and non-starters in the two groups. A starter is defined as a student who has submitted at least one study unit for correction and comments.

Table 10. Start/non-start

	Experimental		Control		Total	
	n	%	n	%	N	%
Starters	171	91	84	87	255	90
Non-starters	16	9	12	13	28	10
Total	187	100	96	100	283	100

χ^2 = .709 df = 1 p = .400
Y = .208 p = .281

We see that there is only a slight difference between the groups on the variable start/non-start. The difference is not significant. Compared with other published results the ratio of non-starters is low in both groups (e.g. see Bääth (1980) where the non-starters in the 6 experiments represented nearly 50

percent). Compared to previous NKI studies, the present results are close to what could be expected. (Rekkedal 1972a, 1978).

Conclusion: We have not found significant differences between the groups, measured by the variable start/non-start.

6.3. Number of days before registration of the first study assignment

Table 11 shows the relationship between the lapse of time from the dispatch of the first study material until the first assignments are registered by the institute.

Table 11. Registration of the first assignment

	Experimental		Control		Total 1)	
	n	%	n	%	N	%
6 - 18 days	65	38	14	17	79	31
19 - 36 days	58	34	43	51	101	40
37 - 228 days	48	28	27	32	75	29
Total	171	100	84	100	255	100

1) Non-starters not included.

χ^2 = 12.845 df = 2 p = .002**
Y = .266 p = .007**

In the experiment there is a significant relationship between group belonging and the lapse of time from enrolment until the school's registration of the first student assignment. However, as the registration time is directly dependent on the treatment variable (the control student assignments are sent to the external tutor before registration of grades), this time difference ought to be controlled for. If one adds approximately two days (median differences in turn-around time), to the upper limits of the time categories for the control groups, the difference between the groups nearly disappears.

Consequently, the conclusion is that we have not registered differences between the groups on the variable lapse of time

between enrolment and start of study that can be attributed to the effect of the experimental variable.

This result is not surprising, as most aspects of the experimental variable will not be experienced by the student at this time.

6.4. Study perseverance

Study perseverance is measured by three different variables: status, number of assignments completed and number of courses completed. The data were collected for each individual student 8 months after enrolment. Furthermore, the status variable was also examined 12 months after enrolment.

6.4.1. Status

Table 12 gives an overview of the students' status 8 months after enrolment, and table 13 shows the situation after 12 months.

Table 12. The students' status 8 months after enrolment

Status	Experimental		Control		Total	
	n	%	n	%	N	%
Completed	51	27	14	16	65	23
Active	61	33	31	32	92	33
Inactive	64	34	48	50	112	40
Cancelled	11	6	3	3	14	5
Total	187	100	96	101	283	101

Statistics:

I 2 x 4 table (all categories separate):

$\chi^2 = 9.413$ df = 3 p = .024*
$\gamma = .233$ p = .019*

II 2 x 3 table (inactive and cancelled combined):

χ^2 = 6.864 df = 2 p = .032*
γ = .266 p = .008**

III 2 x 2 table (completed and active combined, inactive and cancelled combined):

χ^2 = 3.841 df = 1 p = .050*
γ = .257 p = .030*

IV 2 x 2 table (active, inactive and cancelled combined):

χ^2 = 5.078 df = 1 p = .024*
γ = .374 p = .009**

As mentioned in paragraph 6.1., we have found good reasons for analysing the status variable in different ways. The chi-square, gamma calculations and probability values show that all the different interpretations of the status variable are correlated with the experimental treatment.

In this connection it is relevant to discuss whether the status variable should be defined as an ordinal or nominal scale variable. At least in alternative I it is doubtful whether the categories can be strictly ranked. For instance, does "cancelled" generally mean a lower level of success than "inactive"? In our opinion the answer is no. Consequently, the chi-square calculation and the associated probability value give a better information for alternative I, while the gamma calculations might be considered to give a more valuable measure of association between the experimental variable and status for the three other alternatives.

Conclusion: 8 months after enrolment the experimental group has a higher rate of completion than the control group. Although the completion rate is higher in the experimental group, the proportion of active students is still comparable to that of the control group. There is a larger proportion of inactive students in the control group.

The higher proportion of cancellations in the experimental group is probably an effect of the more elaborate follow-up system. There is reason to believe that a large number of the inactive students in the control group actually have dropped out at that time.

Table 13. The students' status 12 months after enrolment

Status	Experimental		Control		Total	
	n	%	n	%	N	%
Completed	69	37	21	22	90	32
Active	44	24	22	23	66	23
Inactive	21	11	35	36	56	20
Cancelled	53	28	18	19	71	25
Total	187	100	96	100	283	100

Statistics:

I 2 x 4 table (all categories separate):

χ^2 = 27.242 df = 3 p < .001***
γ = .139 p = .008

II 2 x 3 table (inactive and cancelled combined):

χ^2 = 7.968 df = 2 p = .019*
γ = .293 p = .003**

III 2 x 2 table (completed and active combined, inactive and cancelled combined):

χ^2 = 5.653 df = 1 p = .017*
γ = .306 p = .008**

IV 2 x 2 table (active, inactive and cancelled combined):

χ^2 = 5.927 df = 1 p = .015*
γ = .352 p = .005**

Table 13 shows that there is an evident and statistically significant relationship between the experimental variable and status 12 months after enrolment, as well.

There are relatively more completers in the experimental group than in the control group, while a larger proportion of the control group students are inactive. The larger number of cancellations in the experimental group is a

result of the closer follow-up procedures. This should be considered as a positive fact, as it would be an advantage for the students as well as the institute that a clear decision is made as to whether the student plans to continue his/her studies.

6.4.2. Number of assignments submitted

The number of assignments submitted at a specific time can also be applied as a measure of perseverance. When applying the status variable as the criterion of success, one must keep in mind that for the completers the number of assignments submitted is the same as the course length. Consequently, the completers have in fact submitted more assignments if they have proceeded to the next stage of study. The results are presented in table 14.

Table 14. The number of assignments submitted 8 months after enrolment

Number of assignments	Experimental		Control		Total	
	n	%	n	%	N	%
15 - 31 units	60	32	20	21	80	28
7 - 15 units	61	33	31	33	92	33
1 - 6 units	50	27	33	34	83	29
0 units	16	9	12	13	28	10
Total	187	101	96	101	283	100

χ^2 = 5.102 df = 3 p = .164
Y = .214 p = .020*

There is a positive relationship between the experimental group treatment and perseverance measured by the number of assignments submitted. The gamma calculations show that this relationship is statistically significant. If the non-starters, the students who have submitted 0 assignments are left out of these analyses, then the experimental group consists of 171 students and the control group of 84 students who really started their studies, defined by submitting at least 1 assignment for

comments and corrections. For these students the measure of association gives γ = .216 and p = .038*, which means that there is a significant positive relationship between the experimental treatment and the number of assignments submitted - even when the non-starters are excluded from the analyses. Further analyses showed that for all subgroups of course length (6-17 units/18-22 units/23-35 units) the correlations are positive.

Some further statistics: The median number of units completed and the arithmetic mean in the experimental group (non-starters exluded) were $Md_{experimental}$ = 10.9 units, $M_{experimental}$ = 12.1 units, $Md_{control}$ = 10.2 units, $M_{control}$ = 10.5 units.

6.4.3. Number of courses completed

As shown in table 15, there is also a positive relationship between the experimental treatment and the number of courses completed 8 months after enrolment.

Table 15. The number of single courses completed 8 months after enrolment

Number of courses	Experimental		Control		Total	
	n	%	n	%	N	%
5 - 12	64	34	24	25	88	31
2 - 4	63	34	31	32	94	33
0 - 1	60	32	41	43	101	36
Total	187	100	96	100	283	100

χ^2 = 3.779 df = 2 p = .151

γ = .198 p = .047*

There is a significant positive relationship between the experimental treatment and perseverance measured by the number of courses completed within the eight month period.

However, when excluding the non-starters the relationship is not statistically significant. In this situation χ^2 = 2.801, df = 2, p = .246, γ = .181, p = .089.

6.4.4. Perseverance - conclusions

To measure the effects of the experimental variable on study success, we examined the following variables: start/non-start, lapse of time between enrolment and submission of first study unit, status (completed, active, inactive or cancelled), number of assignments completed and number of courses completed. The data were collected 8 months after enrolment.

We have not found sufficient evidence to conclude that the experimental group, which was taught and followed up by a personal tutor/counsellor, has a lower rate of non-starters, nor that the students in this group start their studies more rapidly than the control group students.

However, all measures of study success measured by the study perseverance variables indicate that the introduction of the personal tutor/counsellor has a positive effect on the students. The students in the experimental group had a higher completion rate and they completed a larger number of units and courses during the experiment period.

6.5. Postscript concerning completion

The main data from the experiment were collected 8 months after enrolment for each individual student, and the data processing was concluded in the beginning of 1982. However, it has taken some time to complete this report. The last students in the experimental group completed or cancelled their studies in June 1983. At that time the status statistics for the experimental group were as follows:

Completed:	89 students	48 percent
Cancelled:	98 students	52 percent

Although comparable data from the control group have not been collected, we may conclude that compared to most correspondence study statistics these results look promising, considering that the median length of the study is more than 19 study units.

7. ATTITUDE VARIABLES

7.1. Return of questionnaires

As described in paragraph 4.3. a questionnaire was designed to measure the students' attitudes to correspondence education in general as well as different aspects of the method. The same questionnaire was used for both groups. The attitude variable may be conceived of as a composite variable including a number of sub-variables. Some of the sub-variables deal with aspects which were directly involved in the experiment, while others concern aspects which were the same for both groups, for instance the quality of the study material or the degree difficulty of the assignments for submission. The questionnaire was sent to the students when they completed the courses included in the experiment, when they cancelled their studies, or eight months after enrolment.

Table 16. Return of questionnaires

	Experimental		Control		Total	
	n	%	n	%	N	%
Questionnaires returned without reminder	90	48	38	40	128	45
Questionnaires returned after 1 reminder	45	24	29	30	74	26
Questionnaires not returned	52	29	29	30	81	29
Total	187	101	96	100	283	100

X^2 = (2 x 2 table (Returned/not-returned)) = .178, df = 1
.50 < p < .70

The total number of questionnaires returned was 202, i.e. 71 percent. The chi-square calculations show that there are only minor differences between the groups as to the number of students who returned the questionnaire. Because one or more items have been left out from some of the answers, the total number of answers to each individual item will be lower than 202.

In general we may conclude that the loss of data resulting from the questionnaires which were not returned, does not necessarily have a great influence on the differences between the two groups. However, there is a relationship between the success of study measured by the status variable and return of questionnaires. The percentages of returned questionnaires in the different status groups were as follows:

Completed:	98 percent returned
Active:	89 percent returned
Inactive:	47 percent returned
Cancelled:	43 percent returned

These results are not surprising. We have observed previously that the answerers of the post study enquete as a group show better results on the criterion variables than the non-answerers (Rekkedal 1978a). This fact does not mean that the attitudes towards correspondence study are more favourable among the answerers than among the non-answerers. The above mentioned study shows a clear tendency of more positive attitudes towards different aspects of the correspondence study method among students rated as non-success students than among the most successful students.

The translation into English of the scales used in the questionnaires, in the following paragraphs, have been done to the best of our judgement. The original questionnaire is shown in Appendix 1.

7.2. Correspondence study in general

Table 17. "If you were to evaluate correspondence education as a study method, what is your experience concerning this method?"

	Experimental		Control		Total	
	n	%	n	%	N	%
Very good	19	14	7	11	26	13
Good	112	84	52	79	164	82
Neutral	3	2	5	8	8	4
Bad	0	0	2	3	2	1
Very bad	0	0	0	0	0	0
Total	134	100	66	101	200	100
No answer	1		1		2	

$\chi^2 = 6.750$ df = 2 p = .034*

$\gamma = .329$ p = .070

The dotted lines show how the attitude variable has been categorized for the analyses. We see that there is a tendency which

indicates that the experimental students rate the correspondence study method better than the control students. Very few students give a negative answer to the question.

7.3. Quality of the study material

Table 18. "The study material has been ....."

	Experimental		Control		Total	
	n	%	n	%	N	%
Very good	36	27	15	23	51	25
Good	94	70	45	68	139	69
Neutral	5	4	3	5	8	4
Bad	0	0	3	5	3	1
Very bad	0	0	0	0	0	0
Total	135	101	66	101	201	99
No answer			1		1	

$\chi^2 = 2.635$ df = 2 p = .268

$\gamma = .168$ p = .276

There is very little difference between the groups or their attitudes towards the general quality of the study material. As this aspect is not included in the different treatment of the two groups the results are not surprising. Generally, with only a few exceptions, the students rate the study material as good or very good.

7.4. Degree of difficulty of the assignments for submission

The experimental students had the possibility to contact their tutor by telephone and were followed up closely. This could have influenced their work, so that they experienced less problems when answering the assignments during their studies. Therefore the students were questioned concerning the degree of difficulty of the assignments.

Table 19. "The assignments for submission have been ....."

	Experimental		Control		Total	
	n	%	n	%	N	%
Very easy	1	1	1	2	2	1
Easy	17	13	4	6	21	11
Neutral	75	56	40	62	115	58
Difficult	41	31	20	31	61	31
Very difficult	0	0	0	0	0	0
Total	134	101	65	101	199	101
No answer	1		2			

X^2 = 1.483 df = 2 p = .476

Y = .075 p = .578

There is practically no difference between the groups in their judgement of the degree of difficulty of the assignments. A few more students in the experimental group perceived the assignments to be easy.

7.5. Description of the work involved on the assignments for submission

Table 20. "Working on the assignments for submission has been ....."

	Experimental		Control		Total	
	n	%	n	%	N	%
Very stimulating	20	15	5	8	25	12
Stimulating	105	78	53	80	158	79
Neutral	8	6	4	6	12	6
Tiresome	2	1	4	6	6	3
Very tiresome	0	0	0	0	0	0
Total	135	100	66	100	201	100
No answer			1		1	

$\chi^2 = 3.004$ df = 2 p = .223

$\gamma = .302$ p = .064

For most students the work to be done in connection with the assignments for submission is rated as stimulating. Very few students give negative answers. This result conforms with the observations made by Grahm (1969). The difference between the groups is not significant. However, there is a slight tendency which shows that the experimental students have more favourable attitudes towards the assignments for submission. This fact may be a result of the closer communication they have had with their tutor.

7.6. Evaluation of the tutor's work: corrections/comments

The question concerning the quality of the tutors work is directly related to the experimental treatment.

Table 21. "Concerning the tutor's work and comments on my written papers, I have been ....."

	Experimental		Control		Total	
	n	%	n	%	N	%
Very satisfied	85	63	19	29	104	52
Satisfied	48	36	39	59	87	43
Neutral	2	1	6	9	8	4
Dissatisfied	0	0	2	3	2	1
Very dissatisfied	0	0	0	0	0	0
Total	135	100	66	100	201	100
No answer			1		1	

$\chi^2 = 25.765$ df = 2 $p < .001^{***}$

$Y = .620$ $p < .001^{***}$

There is a high correlation between the treatment involved in the experimental variable and the students' opinion of the work done by the distance tutor. The difference is highly significant.

Conclusion: The experimental group students express more positive attitudes towards the general quality of the tutor's work

In addition to the fact that the experimental group students express very favourable attitudes towards the work of their tutor, we may also note that even the control students are generally positive, and actually more positive than the students in our sample 1973/74 (see table 1).

We prefer to think of the differences in opinion between the groups to be a consequence of the tutor/counselling function implied by the experimental variable. It is not completely certain, however, that such a result is not due to specific personality

factors or characteristics of the person in charge of the experimental students.

7.7. Assistance and support from the tutor

Table 22. Concerning assistance and support from the tutor, "I feel I have received ....."

	Experimental		Control		Total	
	n	%	n	%	N	%
Very good assistance	85	63	13	20	98	49
Sufficient assistance	42	31	28	44	70	35
Neutral	8	6	17	27	25	13
Lack of assistance	0	0	6	9	6	3
Great lack of assistance	0	0	0	0	0	0
Total	135	100	64	100	199	100
No answer		3			3	

$\chi^2 = 43.112$ df = 2 $p < .001$***

$\gamma = .717$ $p < .001$***

It is quite clear that the experimental group students give a more positive evaluation of the assistance and support they have received from their tutor than the control students. The difference is statistically significant.

Conclusion: The results show that it is possible to develop a system which offers more assistance and support to the distance students than is the case in the ordinary distance teaching system. From this point of view, it seems that the students consider the personal tutor/counsellor system to be better.

7.8. Distance students and problems of isolation

A feeling of being isolated from tutors and fellow students is often mentioned as a problem for many distance students. We presumed that this problem would diminish in our experimental system. Question 7 of the questionnaire can be translated as follows: "As

a correspondence student one may feel isolated from time to time. One may feel alone, with relatively little support and one must manage many things by oneself. Until now, have you felt isolated in your studies?".

Table 23. Problems of isolation

	Experimental		Control		Total	
	n	%	n	%	N	%
Not at all	22	16	5	8	27	13
Not much	42	31	20	30	62	31
Neutral	2	1	2	3	4	2
To a certain extent	67	50	37	56	104	52
To a large extent	2	1	2	3	4	2
Total	135	99	66	100	201	100
No answer			1		1	

$\chi^2 = 3.42$ df = 2 p = .218

$\gamma = .190$ p = .145

It is interesting to note that it seems that the students either feel isolated or they do not - very few are neutral. There is a small tendency which shows less feelings of isolation in the experimental group, especially the percentage of students who answer "not at all". The difference between the groups is not significant.

Conclusion: It does not seem that the personal tutor/counsellor system organized in the experiment has much effect on the students' feelings of being isolated.

7.9. Guidance and Counselling

As mentioned in paragraph 3.3., we had previously found that the students' positive evaluation of guidance and counselling decreased during the course. Thus, we were interested in examining whether the experimental arrangements influenced the students' judgement concerning guidance and counselling. The same question was again put to both groups: "Do you feel that you have received

sufficient guidance and counselling from the institute, tutor or counsellor during your studies so far ?".

Table 24. Guidance and counselling from the institute, tutor or counsellor

	Experimental		Control		Total	
	n	%	n	%	N	%
Definitely sufficient	66	49	17	26	83	41
Sufficient, in general	58	43	31	47	89	44
Neutral	9	7	11	17	20	10
Not sufficient, in general	2	1	6	9	8	4
Definitely insufficient	0	0	1	2	1	1
Total	135	100	66	101	201	100
No answer			1		1	

$\chi^2 = 18.602$ df = 3 $p < .001$***

$\gamma = .477$ $p < .001$***

Conclusion: There is a statistically significant difference between the experimental and the control group in the students' judgement of the school's guidance and counselling services. The experimental group expresses a more favourable opinion.

7.10. Follow-up

We asked the following question: "Do you feel that the institute and/or the tutor have followed you up during your studies, in addition to the communication resulting from the submission and connection of assignments?" The results are given in table 25.

Table 25. Follow-up by the institute and/or tutor

	Experimental		Control		Total	
	n	%	n	%	N	%
Yes, definitely	101	76	12	19	113	57
To a certain extent	22	17	20	31	42	21
Neutral	8	6	17	27	25	13
Not much	2	2	13	20	15	8
Not at all	0	0	2	3	2	1
Total	133	101	64	100	197	100
No answer 1)	2		3		5	

$\chi^2 = 67.485$ df = 3 $p < .001$***

$\gamma = .815$ $p < .001$***

1) This and the next questions were printed on the second page of the questionnaire. Some of the respondents did not notice the second page.

Conclusion: The results illustrate quite clearly that there is a marked difference between the groups concerning the way they feel they have been followed up during their studies. The personal telephone calls and personal letters seem to have a positive effect on the students' impression of being followed up compared to the system of form letters sent automatically to the control students. The difference is statistically significant.

7.11. Contact by telephone

The students in the experimental group were invited to call their tutor when they needed support and general guidance in their studies. The tutor also used the telephone, if this was possible, to follow-up the students during the inital phases of study, if the students were inactive, and sometimes in connection with correction of and commenting on the assignments. In addition, some of the control students might have been invited to call their tutor(s) by telephone as some part-time tutors follow this practice.

Actually 27 percent of the respondents in the control group confirmed that they have been invited to call. The control students also had the opportunity to telephone or write to the counsellors at the institute.

Table 26. "Do you believe that the possibility for the students to contact the tutor by telephone is of any help in distance study?".

	Experimental		Control		Total	
	n	%	n	%	N	%
To a great extent	72	54	17	20	99	45
To a certain extent	51	38	35	54	86	43
Neutral	6	5	5	8	11	6
Probably not	4	3	8	12	12	6
Definitely not	0	0	0	0	0	0
Total	133	100	65	100	198	100
No answer	2		2		4	

$\chi^2 = 17.047$ df = 3 $p < .001$***

$\gamma = .0495$ $p < .001$***

It is clear that the experimental students, who have experienced the use of the telephone as a teaching medium, have a much more positive opinion of the utility of this medium. (The difference between the groups is interesting in this respect. At NKI we have seen from earlier studies (e.g. Rekkedal & Ljoså, 1974) that when students are asked to give their opinion on matters of which they have little experience, the answers tend to be negative).

Conclusion: Generally, the students who have had the possibility of experiencing contact by telephone have a positive opinion of the usefulness of this medium in distance education.

We also asked: "Do you believe that the telephone used as a means of contact makes the distance student feel less isolated?". Results are presented in table 27.

Table 27. Reduction of feelings of isolation due to communication by telephone

	Experimental		Control		Total	
	n	%	n	%	N	%
Yes, definitely	61	47	24	37	85	43
To a certain extent	48	37	26	40	74	38
Neutral	13	10	8	12	21	11
Probably not	8	6	7	11	15	8
Definitely not	1	1	0	0	1	1
Total	131	101	65	100	196	101
No answer	4		2			

X^2 = 2.101 df = 3 p = .552

Y = .175 p = .145

Students from both groups consider that communication by telephone can contribute to decrease the possible isolation felt by some students. Strangely enough, the control students are more positive concerning the effect of contact by telephone in their answers to this question than to the previous one. (One reason could be that some students do not think that it would be of much help in their studies if they felt less isolated).

However, generally it may be concluded that the experimental students as well as the control students evaluate communication by telephone as a means which decreases the problem of isolation felt by distance students and that it can help them to complete their studies successfully. The students who have had the opportunity to telephone their tutor and to be contacted by their tutor are more positive than those who have not had this opportunity.

7.12. Use of the telephone in actual practice

We asked the students in both groups whether they had been invited to call their tutor by telephone. Among the experimental group

students 129 of the respondents to the questionnaire (97 %) confirmed that they had been invited to call their tutor by telephone, and 4 (3 %) gave a negative answer. Among the control students 18 (27 %) had been invited to call, and 48 (73 %) had not.

The actual use of the telephone was examined for the experimental group. The tutor registered every telephone call he received and every call he made himself. The numbers are too small to analyse in detail, e.g. whether there are significant differences between the number of calls from the students and cost of telephone calls (depending in Norway on the distance between the telephone subscribers). However, there were fewer telephone calls initiated by the students the farther they were located from the institute. For instance, 54 percent of the experimental students in Oslo and Akershus (closest to the institute) called the tutor at least once, while only 41 percent from Nordland, Troms and Finnmark (the nothern most distant counties) called the tutor.

The distribution of telephone calls from the students is shown in table 28.

Table 28. Student initiated telephone calls during the experimental period

Number of telephone calls	n	%
0	106	57
1	43	23
2	21	11
3 - 5	14	7
6 - 9	3	2
Total	187	100

More than 50 % of the experimental students did not initiate contact with the tutor by telephone. The highest number of telephone calls from one student was 9. A total number of 163 student initated telephone calls was registered from 81 students. Only 38 students phoned more than once, very few more than twice.

Table 29. Tutor initiated telephone calls

Number of telephone calls	n	%
0	61	33
1	19	10
2	29	16
3	25	13
4	23	12
5	15	8
6	14	7
7	1	1
Total	187	100

61 students (33 %) were not reached by telephone. A total of 410 tutor initiated telephone calls to students were registered. In the case of tutor initiated telephone calls, the number of students who were reached decreased when the distance from the institute increased. 80 percent of the experimental students in Oslo and Akershus were reached at least once by telephone, while only 59 percent of the students in the three previously mentioned northern counties were reached by the tutor.

7.13. Some relationships between attitudes and contact by telephone

There could be reason to believe that there is a relationship between the attitudes of the experimental students towards different aspects of distance study and their experience of and personal use of the telephone during their studies. Consequently, we examined some of these relationships. Telephone contact can be measured by the variable number of tutor initiated telephone calls or the variable student initiated calls. In these analyses the two telephone contact variables were divided into three categories only: 0 contacts, 1 contact and 2 or more contacts.

We found practically no correlations between the attitudes toward correspondence education in general, toward the study material or the difficulty of assignments and the telephone contact variables.

Attitudes to the work on the assignments and telephone contact

Actually, there was a significant correlation between attitudes towards whether the work on the assignments had been stimulating or not (γ = .296, p = .029). A relatively high number of the students who reported that their work on the assignments had been very stimulating received no phone calls. This is probably because the tutor primarily called the students who after the introductory study period, were either inactive or had difficulties with their studies. There were no correlations between this question and student initiated calls.

Attitudes to the tutor's work/quality of comments and telephone contact

The students' answers to the question above are correlated with the telephone contact variables. Computations of gamma correlations with tutor initiated telephone calls give γ = .127, p = .296 (not significant). The students who received call(s) from the tutor have more favourable attitudes. Examination of relation to student initiated calls give γ = .281, p = .037 (significant). The students who had called the tutor are more positive towards the tutor's work and the comments on their assignments.

Attitudes to assistance and support from the tutor and telephone contacts

Correlations between assistance/support from the tutor and tutor initiated telephone calls give γ = .131, p = .235 (not significant). The tendency is that the students who have received most telephone calls from the tutor express the least favourable attitudes. This may be explained by the fact that the tutor, naturally, has primarily called the students who encountered problems in their studies. It is also interesting to note that there is a significant negative correlation between the number of student initiated calls and attitudes towards assistance/support from the tutor γ = .328, p = .101 **. The tendency is that the students who are least positive concerning assistance and support received from the tutor have not made use of the possibility to contact the tutor by telephone.

Problems of isolation and telephone contacts

We found no relationship between expressed feelings of being isolated and tutor or student initiated phone calls.

Attitudes to guidance/counselling and telephone contacts

There was practically no statistical relationship between the attitudes towards guidance and counselling from the institute, tutor or counsellor and registered tutor initiated telephone calls. However, correlations with student inititated phone calls give $\gamma = .284$, $p = .015^{*}$. One clear tendency is that the students who are the least positive, have not made use of the invitation to call the tutor.

Attitudes to follow-up from the institute/tutor and telephone contacts

The relationship between the students' attitudes towards follow-up from the institute and/or the tutor and student or tutor initiated telephone calls gave γ-coefficients close to 0.

The possibility of telephone contact as a helpful medium in distance study

The answer to the question of whether the possibility of establishing telephone contact with the tutor would be of any help in distance study was highly related to whether the student had had such contacts.

Correlation with tutor initiated contacts gave $\gamma = .935$, $p < .001^{***}$, which means that the students who had received telephone calls from the tutor were clearly positive concerning the effect of this medium. Correlation with student initiated calls gave $\gamma = .554$, $p < .001^{***}$, which also means that those students who initiated telephone contact themselves had a positive attitude to the effect of the medium.

Attitudes to the telephone as a medium which can reduce the feeling of being isolated and telephone contact.

These relations are also positive. The correlation with tutor initiated calls, $\gamma = .230$, $p = .028^{*}$, while correlation with students initiated calls gives $\gamma = .273$, $p = .016^{*}$. This means that the students who have had telephone contacts with their tutor, either tutor initiated or student initiated express that this may reduce the feeling of being isolated, which is experienced by many distance students.

7.14. Some relationships between student variables and the use of the telephone

All students in the experimental group were invited to call the tutor by phone. Whether to use this possibility or not may depend on the availability of a telephone, the need felt by the student, experience of the use of a telephone or resistance against the use of the telephone.

Age

The oldest students made most telephone calls, the youngest students made the fewest calls. The difference was significant $\gamma = .239$, $p = .013$*.

Period of time since last school experience

There was only a slight correlation between the lapse of time since last school experience and student initiated calls, a tendency that the students who had just left school made the fewest calls.

Level of education

There was practically no correlation between the level of education and student initiated calls.

7.15. Some relationships between criterion variables and the use of the telephone

We examined the relations between the status variable and number of assignments/study units completed and student initiated calls. It was clearly demonstrated that the active and successfull students were the ones who made use of the possibility to call the tutor by telephone.

The correlation between student initiated phone calls and status give $\gamma = .242$, $p = .009$**. The experimental students who are registered as cancelled or inactive 8 months after enrolment have made few calls to the tutor. The relation between student initiated calls and number of study units completed gives $\gamma = .353$, $p < .001$***.

7.16. Turn-around time

The question of an acceptable turn-around time and how to reduce turn-around time has been an important issue in distance education. Turn-around time was also an important aspect of the

experimental variable in our experiment. Turn-around time was measured again through the questionnaire sent to the students. The results are shown in table 30. The question was: "Think about your submitted assignments. Try to assess as accurately as possible how long it took on an average, from the time you mailed the assignments until you received them in return".

Table 30. Turn-around time as reported by the students

	Experimental		Control		Total	
	n	%	n	%	N	%
2 days	10	8	0	0	10	5
3 days	47	37	4	6	51	26
4 days	34	27	2	3	36	19
5 days	19	15	13	20	32	17
6 days	9	7	11	17	20	10
7 days	6	5	12	18	18	9
8 days	2	2	11	17	13	7
9 days or more	1	1	12	18	13	7
Total	128	102	65	99	193	100
No answer	7		2			

$X^2 = 65.969$ df = 2 $p < .001^{***}$

$Y = .815$ $p < .001^{***}$

Table 30 clearly illustrates that the experimental group experienced a turn-around time which is shorter than that experienced by the control group. In the experimental group only 3 percent reported a turn-around time of more than 1 week, the limit of what is considered to be acceptable.

Compared to previous research at NKI the results are very promising. Table 31 illustrates this.

Table 31. Turn-around time. Experimental and control groups in 1980/1981 compared to the 1972/73 experiment

	1980/1981				1972/1973			
	Experimental		Control		Experimental		Control	
	n	%	n	%	n	%	n	%
2 - 4 days	95	71	6	9	16	27	1	3
5 - 7 days	34	27	36	55	31	52	8	23
8 days or more	3	2	23	35	13	22	26	74
Total	128	100	65	99	60	101	35	100

The median turn-around time reported by the students was as follows:

1980/81 Experimental group Md = 3.7
1972/73 Experimental group Md = 5.6
1980/81 Control group Md = 6.5
1972/73 Control group Md = 8.3

This indicates that by moving the tutor's functions into the institute, the turn-around time is further reduced, as shown by the difference between the experimental groups. In the 1972/73 experiment we employed a part-time tutor who picked up the assignments at the institute and brought them back the next workday. The 1972/73 experiment showed that reducing the turn-around time had signficant positive effects on completions as well as the attitudes expressed by the students. Since then we have put great emphasis on reducing turn-around time by rationalising routines and by giving information to the part-time tutors and other personnel involved in the system and motivating them to contribute to a quick response. Comparison between the control groups illustrates clearly that these efforts have been successful. A median reported turn-around time of 6.5 days is probably the shortest time one can hope to achieve in a response system that includes 4 postal handlings. Since this experiment was completed, the number of mailings has been reduced to 3, a fact which probably will reduce the median turn-around time in the normal NKI system to less than 6 days.

7.17 Attitudes towards turn-around time

The students were also asked to state their opinion about the turn-around time. The results are shown in table 32.

Table 32. Attitudes towards the turn-around time

	Experimental		Control		Total	
	n	%	n	%	N	%
Surprisingly fast	33	25	2	3	35	18
Faster than expected	61	47	11	17	72	37
Neutral	31	24	37	57	68	35
A little too slow	5	4	15	23	20	10
Far too slow	0	0	0	0	0	0
Total	130	100	65	100	195	100
No answer	5		2		7	

$\chi^2 = 51.797$ df = 3 $p < .001$***

$\gamma = .761$ $p < .001$***

The difference between the groups is statistically significant. The experimental group is far more positive than the control group. There is a good reason to note, however, that very few students, including members of the control group, express negative views. Compared to the control in 1972/73, the control group in this experiment has a much more positive opinion. In 1972/73 43 percent of the control students were negative, 51 percent were neutral, and only 6 percent were positive.

7.18 Relationship between experienced turn-around time and attitudes

In our 72/73 study we found a clear correlation between experienced turn-around time and the students' attitudes. This relationship is, of course, the reason for the more positive attitudes among the control group students in the 1980/81 experiment. The turn-around time in the NKI distance study system has generally been decreased. This relationship is shown in table 33 where the experimental and control group students are united.

Table 33. Turn-around time and attitudes

	Number of days								Total
	2	3	4	5	6	7	8	9+	
Surprisingly fast	6	19	6	2	1				34
Faster than expected	3	20	21	14	6	5	1	1	71
Neutral	1	12	8	15	10	11	7	4	68
A little too slow			1	1	3	2	5	8	20
Far too slow									0
Total	10	51	36	32	20	18	13	13	193

γ = .65 $p < .001^{***}$

Conclusion: There is a clear and statistically significant relationship between the experienced turn-around time and the students' attitudes. As shown in previous studies, when the turn-around time exceeds one week, a considerable part of the respondents are not satisfied.

8. Concluding Remarks

8.1. Drop-out during the initial phases of distance study

Previous studies concerning distance students at NKI-skolen and elsewhere clearly indicate that many students give up their studies. The number of students who drop out is higher during the first phases of the studies than during later phases. At NKI we have shown that drop-out can be effectively reduced by different educational and/or administrative measures.

8.2. The personal tutor/counsellor

This experiment was especially designed to find out whether the quality of our distance teaching system could be improved:

Firstly, by combining efforts and means which had previously proved to increase the quality of the system, secondly, by personalizing the system through the introduction of a "personal tutor/counsellor".

The personal tutor/counsellor as described in this experiment, was introduced in an attempt to combine the efficiency of a modern distance teaching system with the personalized teaching known from some of the early innovations in correspondence education. The different aspects or dimensions involved in the experimental variable were described in paragraph 3.9. As part of a larger joint project between Norwegian correspondence schools called "Early withdrawal in distance education", the experiment was carried out among students attending courses during the first stage of different larger course compositions offered by NKI-skolen.

8.3. Sources of errors

There are primarily two sources of errors in the experiment:

1. Initial differences between the experimental group and the control group.

2. Definition and interpretation of the experimental variable.

Possible differences between the experimental and control groups are to some extent controlled by the method of random selection into groups and through the examination of background variables presented in chapter 5. We did not find significant differences between the groups of the pre-experiment stage which could explain possible differences measured by the criterion variables. On the contrary, the higher number of women and middle-aged students (25-50 years) in the control group, should influence the results in favour of the control group.

The question concerning the definition and interpretation of the experimental variable is a difficult one. Firstly, in our experiment the experimental variable is composed of a number of different efforts to increase the quality of the tutor/counsellor functions in distance education. Consequently, the differences between the experimental and the control group must be explained by the total organization of the tutoring system rather than by one or another of the specific aspects involved. This is a result of the fact that we wished to examine a complete system, not specific efforts within the system. Thus, any conclusions must be related to the complete organization of the experimental variable and not to the sub-variables.

Another question is the personality factor where the tutor is concerned. Can the results be generalized to other tutors doing the same job under similar conditions? Our experiment cannot give a certain answer to this question. Significant differences between the experimental group and the control group in the experiment prove that it is possible to arrange the tutor's work so that the student is offered a more attractive tutoring system and better opportunities to complete the first part of distance studies successfully.

8.4. Study perseverance

On a descriptive level, for both groups as a whole, the results show that:

The degree of study perseverance is relatively high. For example only 10 percent were non-starters, i.e. they did not start to send in their answers to the assignments for submission. The number of completions was relatively high (32 % twelve months after enrolment). (Median course length was 19.3 study units). The study activity was generally high; more than 60 percent had completed 7 study units or more, 28 percent had completed 15 or more study units.

To examine the effect of introducing the personal tutor/counsellor in distance education as the treatment variable in the experiment 28 tests of significance were performed. In these significance tests, the difference between the experimental group and the control group was measured by various criterion variables which are often applied in investigations concerning distance study. Both the chi-square calculations and gamma-correlations were tested for statistical significance. The reason for applying both methods was that in some instances opinion may differ as to whether the criterion variable should be considered to belong to the nominal or ordinal group. A summary of the results from the significance tests is presented in table 34. We have underlined the test of significance, that we consider to be the most meaningful in each case according to measurement scale level.

Table 34. Summary of experimental results

Criterion variable	Test of significance	
	Gamma	Chi-square
Start	(+) n.s.	(+) n.s.
Registration of first assignment	(+) **	(+) **
Status 8 months		
2.4 table I	(+) *	(+) *
2.3 table II	(+) **	(+) *
2.2 table III	(+) *	(+) *
2.2 table IV	(+) **	(+) *
Status 12 months		
2.4 table 1	(+) n.s.	(+) ***
2.3 table II	(+) **	(+) *
2.2 table III	(+) **	(+) *
2.2 table IV	(+) **	(+) *
Number of assignments completed	(+) *	(+) n.s.
Number of assignments completed (non-starters exluded)	(+) *	(+) n.s.
Number of courses completed	(+) *	(+) n.s.
Number of courses completed (non-starters excluded)	(+)n.s.	(+) n.s.

\+ Experimental group shows better results than control group

n.s. Not significant

* Significant on the .05 level

** Significant on the .01 level

*** Significant on the .001 level

Table 34 shows clearly that, measured by the study perseverance variables, the experimental group performs better than the control group. For all different definitions of the criterion variable, except start/non-start, and number of course completions (non-starters excluded), the differences are statistically significant.

It seems obvious that with regard to study perseverance the organization of the tutor role as examined in the experiment has positive effects on study activity, completions and perseverance. We have all reason to believe that the results are valid generally and that they are not the effect of the individual personality factors and/or behaviour patterns of the tutor in the experiment. However, this assumption ought to be examined in a wider perspective.

8.5. Attitudes

Also when speaking of attitudes to correspondence study and the different aspects examined by the questionnaire, one can certainly conclude that on a descriptive level the students generally expressed favourable attitudes. For example 95 percent of all the students ticked "correspondence education as a "good" or "very good" method of study".

To examine the effect of the new tutor/counsellor role on the attitudes expressed by the students, a number of significance tests were also performed. A summary of these tests is presented in table 35.

Table 35. Summary of results measured by the questionnaire

Criterion variable	Test of significance	
	Gamma	Chi-square
(x) Attitudes towards correspondence study in general	(+) *	(+) n.s.
Attitudes toward the study method	(+) n.s.	(+) n.s.
Difficulty of assignments for submission	n.s.	n.s.
Attitudes to the work with the assignments	(+) n.s.	(+) n.s.
(x) Attitudes to the tutor's work	(+) ***	(+) ***
(x) Assistance and support from the tutor	(+) ***	(+) ***
(x) Problems of isolation	(+) n.s.	(+) n.s.
(x) Guidance and counselling from the institute tutor or counsellor	(+) ***	(+) ***
(x) Follow-up by the institute and/or the tutor	(+) ***	(+) ***
Attitudes to telephone contacts as a helpful medium	(+) ***	(+) ***
Attitudes to telephone to reduce problems of isolation	(+) n.s.	(+) n.s.

(x) means that there is an expected relationship between this criterion variable and the experimental treatment covered by the hypotheses of the experiment.

Table 35 illustrates clearly that the experimental group shows more favourable attitudes towards correspondence study. Of the 6 tests of significance performed to examine the main attitude variables in the experiment, 5 are statistically significant. It is worth noting that although the students of the experimental group

report a slighter degree of isolation problems than the control students, it seems clear that the new teaching/counselling system does not help to reduce the isolation which is felt by some distance student. Consequently, if isolation is considered to be a serious problem in distance study, it must be solved by other means: local study centres, face-to-face teaching, study circles etc.

The positive effects on the students' attitudes to the aspects of study which are directly influenced by the role of the tutor do not spread to aspects not directly involved, such as attitudes to the study material, the difficulty of the assignments and the actual work with assignments for submission. It is clearly demonstrated that the students who have experienced a systematic use of the telephone as a medium for tutoring and counselling in distance education, feel that it has been helpful. Both groups express that the telephone could reduce the problem of isolation. (This fact can be questioned, as we did not find any large differences between the groups concerning actual feelings of isolation).

The experiment has demonstrated that by introducing the personal tutor/counsellor as defined in the experiment, the quality of distance teaching can be considerably improved. This is illustrated by both study perseverance variables and by the attitudes expressed by the students towards aspects of distance study influenced directly by the new tutor role.

8.6. Some cost and financial considerations

Through the experiment described in this report we have shown that it is possible to organize a distance teaching system of a higher quality by integrating the tutor and counsellor roles and thereby also including student services such as telephone tutoring, minimal turn-around time etc. In order to receive support to introduce the system on a permanent basis or on a larger scale it is essential that it can be justified also from a financial point of view. This does not mean that we cannot accept higher costs, but that higher costs should result in higher quality teaching. Furthermore, for distance students who pay fees for their courses, there is a limit to what they are prepared to pay.

On the other hand, one may experience that some developments of the teaching system, which increase the quality, cost very little, or that increased costs are counterbalanced by increased income. In some cases, increased quality results in better economy even when quality costs. This may in fact often be the case for NKI-skolen's distance courses: firstly, because the students pay by installments according to their study progress, and secondly, because the state grants a subsidy which is released according to a

certain study progress. The main part of it is granted when the student has completed the course.

Consequently, during the project period, when testing the effects of introducing the "personal tutor/counsellor" we also paid some attention to costs.

When examining costs and savings one has to assess the amount of work expected to be carried out by a full-time distance tutor. During the experiment we found that, on an average, tutors could be expected to take responsibility for tutoring and following up 400 new enrollees a year. Due to cancellations and completions the tutor would then at any time be responsible for around 200 more or less active students. These figures seem to be realistic, as we have calculated that a full-time tutor can handle up to 400 assignments per month, i.e. 4800 assignments per year. We also found that the average number of assignments submitted per student is 12, which means that 400 students will submit around 4800 assignments during their first year of study.

Carrying these assumptions in mind, the 1980-1981 figures were as follows:

Tutor's wages (including social security expenses)	N.kr 134 000,-
Extra telephone costs for telephone tutoring and following up by telephone	N.kr 16 000,-
	N.kr 150 000,-
- Fee to be paid to external tutors for 4800 assignments	N.kr 90 000,-
- Postage to and from external tutors and postage saved by using the telephone	N.kr 15 000,-
	N.kr 105 000,-
Rough estimate of extra costs	N.kr 45 000,-

The extra costs do not include expenses such as office space, etc. Under these conditions we have calculated that the system of introducing the personal tutor/counsellor as described in the experiment costs approximately N.kr 100,- per student. However, the "traditional" NKI distance learning system emphasizes the significance of the services offered by the counsellors. The main workload of the student counsellors is allocated to the students during the initial phases of study. Consequently, and roughly estimated, the extra costs will balance against costs for normal counselling and advice services.

Based on the fact that, as a rule, the NKI-students are expected to pay a price which is in relation to the amount of teaching they receive and that state grants are also dependent on study progress, the institute increases its income when students increase the number of study units completed. In our experiment we found that the average number of study units completed during the experimental period $M_{Experimental} = 12.1$, while the corresponding number $M_{control} = 10.5$, 8 months after enrolment. If we assume that this difference in averages of 1.6 study units will increase to approximately 2.0 study units totally during their first sublevel studies (see 4.1) and that the school's gross income in 1980-81 was approximately N.kr 100,- per study unit, the gross extra income from the 400 students taken care of by the personal tutor/counsellor during one year will be roughly N.kr 80 000,-.

Furthermore, we found that the percentage of students completing the first sublevel of their studies during the first twelve months of study was 37 for the experimental group and 22 for the control group. The difference in completion rates had increased from 11 percent 8 months after enrolment to 15 percent 12 months after enrolment. Referring to the postscript in paragraph 6.5. which shows that the total completion rate for the experimental students had risen to 48 percent, we can roughly estimate the difference in completion rates between the groups to amount to approximately 20 percent.

The students who complete the sublevel studies will enrol for the next courses consisting of approximately 30 study units. Our experience from previous research illustrates very clearly that the drop-out rates are low after the starting phase of the studies. Consequently, some students will drop out during the next study level, while some will continue to subsequent levels of study. If we estimate the average number of extra study units submitted by the students who have completed the first sublevel to be 30 study units (or one complete sublevel of study) the extra gross income from these students will be N.kr 100 x 400 x 0.20 x 30 = N.kr 240 000.

The result of these considerations is that, under the conditions mentioned before, the educational system which includes a personal tutor/counsellor results in a higher quality of the distance teaching system, increased student activity, higher completion rates and more satisfied students. For the institute the system involves only a moderate increase in expenses, if any. The possible increase in expenses is more than counterbalanced by the increased gross income resulting from an increase of study activity.

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SPORRESKJEMA

I forbindelse med vurdering av en del administrative forhold vedrørende undervisning, studieoppfølging og rådgivning ved NKI-skolen er vi interessert i å få svar på en del generelle spørsmål om hvordan elevene opplever brevundervisningen. Vi ville derfor være svært takknemlig om du kunne ta deg tid til å fylle ut dette skjemaet så nøyaktig som mulig.

Vennlig hilsen
Torstein Rekkedal
Forskningsleder

Elevnummer .....

1. **Hvis du skal vurdere brevunderivsning som studieform, hvordan mener du den har vært?**

Svært bra	Bra	Vet ikke	Dårlig	Svært dårlig
☐	☐	☐	☐	☐

2. **Studiemateriellet har vært**

Svært bra	Bra	Vet ikke	Dårlig	Svært dårlig
☐	☐	☐	☐	☐

3. **Innsendingsoppgavene har vært**

Svært lette	Lette	Middels	Vanskelige	Svært vanskelige
☐	☐	☐	☐	☐

4. **Arbeidet med innsendingsoppgavene har vært**

Svært stimulerende	Stimulerende	Vet ikke	Kjedelig	Svært kjedelig
☐	☐	☐	☐	☐

5. **Når det gjelder lærerens arbeid og kommentarer til mine besvarelser, har jeg vært**

Svært fornøyd	Fornøyd	Vet ikke	Misfornøyd	Svært misfornøyd
☐	☐	☐	☐	☐

6. **Når det gjelder hjelp og støtte fra læreren, mener jeg at jeg har fått:**

Absolutt tilstrekkelig hjelp	som regel tilstrekkelig hjelp	Vet ikke	som regel ikke tilstrekkelig hjelp	Absolutt ikke tilstrekkelig hjelp
☐	☐	☐	☐	☐

7. **Som brevskoleelev kan det forekomme at man føler seg litt isolert. Man kan føle seg alene med forholdsvis små muligheter for å få støtte og må greie mye på egen hånd. Har du foreløpig følt deg isolert i dine studier?**

Ja, i høy grad	Ja, til en viss grad	Vet ikke	Nei, ikke særlig	Nei, ikke i det hele tatt
☐	☐	☐	☐	☐

8. **Føler du at du har fått tilstrekkelig råd og veiledning fra skolen, lærer eller rådgiver til å gjennomføre studiene så langt?**

Ja, absolutt	Ja, stort sett	Vet ikke	Nei, stort sett ikke	Nei, absolutt ikke
☐	☐	☐	☐	☐

9. **Føler du at skolen og/eller læreren har fulgt deg opp gjennom studiene utenom selve oppgavebesvarelsene?**

Absolutt	Til en viss grad	Vet ikke	Ikke særlig	Absolutt ikke
☐	☐	☐	☐	☐

10. **Tror du at muligheten for telefonkontakt med lærer er til noen hjelp i brevstudiet?**

Ja, i høy grad	Til en viss grad	Vet ikke	Nei, neppe	Nei, absolutt ikke
☐	☐	☐	☐	☐

11. **Tror du telefonen som kontaktmiddel fører til (ville føre til) at brevskoleeleven føler seg mindre isolert?**

Ja, absolutt	Til en viss grad	Vet ikke	Nei, neppe	Nei, absolutt ikke
☐	☐	☐	☐	☐

12. **Har du fått noen oppfordring eller mulighet til å ringe lærerer?**

Ja ☐ Nei ☐

13. **Har du ringt læreren?**

Ja ☐ Nei ☐

14. **Har læreren ringt deg?**

Ja ☐ Nei ☐

15. **Tenk tilbake på besvarelsene dine. Prøv å anslå så nøyaktig som mulig hvor lang tid det tok i gjennomsnitt fra du sendte besvarelsene til du fikk dem tilbake?**

☐ 1 dager	☐ 2 dager	☐ 3 dager	☐ 4 dager	☐ 5 dager	☐ 6 dager	☐ 7 dager	☐ 8 dager	☐ 9 dager	☐ 10 dager

16. **Hva synes du om denne tiden?**

Altfor lang tid	Litt lang tid	Normalt	Fortere enn ventet	Overraskende fort
☐	☐	☐	☐	☐

Hvis du har andre positive eller negative synspunkter når det gjelder dine foreløpige erfaringer som brevskoleelev, kan du bruke plassen nedenfor.

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Mange takk.

NKI-SKOLEN
Skole og forlag / Ideell stiftelse

Prof. Kohts vei 108,
Postboks 10, 1321 Stabekk
Telefon: (02) 12 29 50
Bankgiro: 8002.05.02391
Postgiro: 4 30 21 21

INGENIØRSKOLE
ARBEIDSLEDERSKOLE
PERSONALOPPLÆRING
HANDELSSKOLE
BREVSKOLE

Form letter 1

Stabekk,

Først vil jeg ønske deg velkommen som elev.

Når du nå skal sette i gang med brevstudiet ditt, vil du merke at det er noe forskjellig fra "vanlig" skolegang. Det vil kreve en litt annen studieteknikk enn det du kanskje er vant med fra før.

Derfor har vi sammen med det ordinære studiemateriellet sendt deg "Lær bedre", som er et hefte med praktiske øvinger i studieteknikk.

Jeg vil anbefale deg å arbeide godt med dette heftet og løse alle oppgavene. Når du har gjort det, kan du sende "Lær bedre" til skolen. Du vil da få tilbake heftet med kommentarer fra meg sammen med et kursbevis.

Sammen med studiemateriellet får du også elevorienteringen for brevskolen. Denne må du lese nøye gjennom, for her finner du en del opplysninger som vil hjelpe deg i studiearbeidet. Jeg vil særlig vise til det som står om studieplan på side 4. Du har fått en leseplan, og den leser du på samme måte som beskrevet for studieplanen.

Studiebrevene bør du begynne å arbeide med parallelt med "Lær bedre". Prøv om du kan omsette studieteknikken i praksis. Greier du det, er jeg sikker på at det vil gå greit med studiearbeidet.

Jeg vil være din brevskolelærer og din personlige kontakt ved skolen, og jeg ser derfor gjerne at du tar kontakt med meg dersom det er noe du lurer på. Det kan du gjøre enten ved å skrive et lite brev eller ringe (02) 12 29 50. Selvfølgelig er du også velkommen til et besøk her ved skolen hvis du bor slik at det passer.

Jeg håper vi går en hyggelig samarbeidstid i møte og ønsker deg lykke til med "Lær bedre" og de første studiebrevene.

Hilsen din brevskolelærer

106

Knut Finsen
Lærer nr. 1234.

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INGENIØRSKOLE
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PERSONALOPPLÆRING
HANDELSSKOLE
BREVSKOLE

Form letter 2 A

Stabekk,

Det er omtrent en måned siden du meldte deg som brevskoleelev, og jeg sender deg noen ord igjen.

Jeg kan ikke se å ha mottatt din første besvarelse. Skulle det være slik at du ennå ikke har sendt inn noe besvarelse, vil jeg anbefale deg å gjøre det så snart som mulig - det er alltid en fordel å komme rask i gang.

I alle fall håper jeg at du har begynt å "kikke" på studiebrevene og satt deg grundig inn i din leseplan. Prøv å utnytte de rådene du har funnet i "Lær bedre".

Når du kommer i gang med studiearbeidet, er det viktig å holde jevn studieaktivitet. Det viser seg nemlig at det ofte er tungt å komme i gang etter kortere eller lengre avbrudd i studiene.

Skulle du av en eller annen grunn komme til å ta et studieopphold på 1 måneds varighet eller mer, vil jeg for ordens skyld minne om at du må gi skolen skriftlig beskjed om dette.

Forøvrig håper jeg alt går greit, og som jeg tidligere har nevnt, hører jeg gjerne fra deg dersom det skulle dukke opp problemer e.l.

Lykke til med studiene!

Hilsen din brevskolelærer

Knut Finsen
Lærer nr. 1234

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INGENIØRSKOLE
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PERSONALOPPLÆRING
HANDELSSKOLE
BREVSKOLE

Form letter 2 B

Stabekk,

Det er omtrent en måned siden du meldte deg som brevskoleelev, og jeg sender deg noen ord igjen.

Jeg ser at du er kommet i gang med studiene, og det synes jeg er hyggelig. Vår erfaring er nemlig den at elever som kommer raskt i gang med studiearbeidet, ofte gjør det bra i fortsettelsen.

Prøv å holde jevn studieaktivitet fremover - det tror jeg er et godt råd. Det viser seg ofte at det er tungt å komme i gang igjen etter kortere eller lengre avbrudd i studiene.

Skulle du av en eller annen grunn komme til å ta et studieopphold på 1 måneds varighet eller mer, vil jeg for ordens skyld minne om at du må gi skolen skriftlig beskjed om dette.

Forøvrig håper jeg alt går greit og som jeg tidligere har nevnt, hører jeg gjerne fra deg dersom det skulle dukke opp problemer e.l.

Fortsatt lykke til med studiene!

Hilsen din brevskolelærer

Knut Finsen
Lærer nr. 1234

Studierådgivning og rekvisisjon: Mandag - fredag kl. 09.00 - 15.00 Annen kontorarbeidstid kan avtales.

APPENDIX 3

NKI-SKOLEN
Skole og forlag / Ideell stiftelse

Prof. Kohts vei 108,
Postboks 10, 1321 Stabekk
Telefon (02) 12 29 50
Bankgiro 8002.05.02971
Postgiro 4 10 21 21

INGENIØRSKOLE
ARBEIDSLEDERSKOLE
PERSONALOPPLÆRING
HANDELSSKOLE
BREVSKOLE

Kjære elev !

På NKI-skolens og egne vegne ønsker jeg deg hjertelig velkommen til studiet.

For at du skal få en viss oppfatning av hvem din brevskolelærer er, skal jeg fortelle litt om meg selv.

Jeg er 34 år gammel, er gift og har 2 barn. Av utdannelse er jeg Bilteknisk Ingeniør fra NKI's Ingeniørhøgskole. Jeg har også bedriftsøkonomisk utdannelse fra Bedriftsøkonomisk institutt. I tillegg til dette er jeg også utdannet drifts-ingeniør fra NKI's Brevskole og jeg har derfor godt kjennskap til brevstudier.

I de siste 10 år har jeg administrert et mindre bilverksted i Oslo, men er nå ansatt ved NKI-skolen.

Jeg bor litt utenfor Oslo-sentrum i nær kontakt med skog og mark, slik at jeg har rik anledning til friluftsliv. Orienteringssporten har jeg dyrket i mange år og har i de siste 3-4 år engasjert meg sterkt i fotballstyret i Vålerengen IF.

Jeg vil være din brevskolelærer i de kursene som inngår i det 1. trinnet av studiet ditt.

Hvis du ser på studieforslaget som du har mottatt, vil du se hvilke kurs dette omfatter.

Jeg skal altså være din lærer og veileder gjennom den første delen av ditt studium og håper med dette å få i stand en åpen og hyggelig kontak med deg.

Gjennom en felles innsats og et godt samarbeid er jeg sikker på at du vil få det rette utbytte av studiet ditt.

Skulle du få noen form for problemer underveis, må du ikke være redd for å spørre, ta gjerne kontakt med meg ved å ringe til NKI-skolen (02-12 29 50).

Jeg vil på min side følge deg i din studieframgang og gjøre mitt til at eventuelle problemer kan drøftes og løses på en fornuftig måte.

Jeg tar kontakt med deg om noen dager for å høre om det skulle være noen startvansker - lykke til så lenge.

Med vennlig hilsen

Knut Finsen
Lærer nr. 1234

109